Service Manual

Lexmark™ 6500e

4036-310
4036-311

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Safety information

- The safety of this product is based on testing and approvals of the original design and specific components. The manufacturer is not responsible for safety in the event of use of unauthorized replacement parts.
- The maintenance information for this product has been prepared for use by a professional service person and is not intended to be used by others.
- There may be an increased risk of electric shock and personal injury during disassembly and servicing of this product. Professional service personnel should understand this and take necessary precautions.
- **CAUTION:** When you see this symbol, there is a danger from hazardous voltage in the area of the product where you are working. Unplug the product before you begin, or use caution if the product must receive power in order to perform the task.

Consignes de sécurité

- La sécurité de ce produit repose sur des tests et des agréations portant sur sa conception d'origine et sur des composants particuliers. Le fabricant n'assume aucune responsabilité concernant la sécurité en cas d'utilisation de pièces de rechange non agréées.
- Les consignes d'entretien et de réparation de ce produit s'adressent uniquement à un personnel de maintenance qualifié.
- Le démontage et l'entretien de ce produit pouvant présenter certains risques électriques, le personnel d'entretien qualifié devra prendre toutes les précautions nécessaires.
- **ATTENTION :** Ce symbole indique la présence d'une tension dangereuse dans la partie du produit sur laquelle vous travaillez. Débranchez le produit avant de commencer ou faites preuve de vigilance si l'exécution de la tâche exige que le produit reste sous tension.

Norme di sicurezza

- La sicurezza del prodotto si basa sui test e sull'approvazione del progetto originale e dei componenti specifici. Il produttore non è responsabile per la sicurezza in caso di sostituzione non autorizzata delle parti.
- Le informazioni riguardanti la manutenzione di questo prodotto sono indirizzate soltanto al personale di assistenza autorizzato.
- Durante lo smontaggio e la manutenzione di questo prodotto, il rischio di subire scosse elettriche e danni alla persona è più elevato. Il personale di assistenza autorizzato deve, quindi, adottare le precauzioni necessarie.
- **ATTENZIONE:** Questo simbolo indica la presenza di tensione pericolosa nell'area del prodotto. Scollegare il prodotto prima di iniziare o usare cautela se il prodotto deve essere alimentato per eseguire l'intervento.

Sicherheitshinweise

- Die Sicherheit dieses Produkts basiert auf Tests und Zulassungen des ursprünglichen Modells und bestimmter Bauteile. Bei Verwendung nicht genehmigter Ersatzteile wird vom Hersteller keine Verantwortung oder Haftung für die Sicherheit übernommen.
- Die Wartungsinformationen für dieses Produkt sind ausschließlich für die Verwendung durch einen Wartungsfachmann bestimmt.
- Während des Auseinandernehmens und der Wartung des Geräts besteht ein zusätzliches Risiko eines elektrischen Schlags und körperlicher Verletzung. Das zuständige Fachpersonal sollte entsprechende Vorsichtsmaßnahmen treffen.
- **ACHTUNG:** Dieses Symbol weist auf eine gefährliche elektrische Spannung hin, die in diesem Bereich des Produkts auftreten kann. Ziehen Sie vor den Arbeiten am Gerät den Netzstecker des Geräts, bzw. arbeiten Sie mit großer Vorsicht, wenn das Produkt für die Ausführung der Arbeiten an den Strom angeschlossen sein muß.

Pautas de Seguridad

- La seguridad de este producto se basa en pruebas y aprobaciones del diseño original y componentes específicos. El fabricante no es responsable de la seguridad en caso de uso de piezas de repuesto no autorizadas.
- La información sobre el mantenimiento de este producto está dirigida exclusivamente al personal cualificado de mantenimiento.
- Existe mayor riesgo de descarga eléctrica y de daños personales durante el desmontaje y la reparación de la máquina. El personal cualificado debe ser consciente de este peligro y tomar las precauciones necesarias.
- **PRECAUCIÓN:** este símbolo indica que el voltaje de la parte del equipo con la que está trabajando es peligroso. Antes de empezar, desenchufe el equipo o tenga cuidado si, para trabajar con él, debe conectarlo.

Informações de Segurança

- A segurança deste produto baseia-se em testes e aprovações do modelo original e de componentes específicos. O fabricante não é responsável pela segunrança, no caso de uso de peças de substituição não autorizadas.
- As informações de segurança relativas a este produto destinam-se a profissionais destes serviços e não devem ser utilizadas por outras pessoas.
- Risco de choques eléctricos e ferimentos graves durante a desmontagem e manutenção deste produto. Os profissionais destes serviços devem estar avisados deste facto e tomar os cuidados necessários.
- **CUIDADO:** Quando vir este símbolo, existe a possível presença de uma potencial tensão perigosa na zona do produto em que está a trabalhar. Antes de começar, desligue o produto da tomada eléctrica ou seja cuidadoso caso o produto tenha de estar ligado à corrente eléctrica para realizar a tarefa necessária.

Informació de Seguretat

- La seguretat d'aquest producte es basa en l'avaluació i aprovació del disseny original i els components específics.
  El fabricant no es fa responsable de les qüestions de
  seguretat si s'utilitzen peces de recanvi no autoritzades.
- La informació pel manteniment d'aquest producte està orientada exclusivament a professionals i no està destinada
  a ningú que no ho sigui.
- El risc de xoc elèctric i de danys personals pot augmentar durant el procés de desmuntatge i de servei d'aquest producte. El personal professional ha d'estar-ne assabentat i prendre
  les mesures convenients.
-
  PRECAUCIÓ: aquest símbol indica que el voltatge de la part de l'equip amb la qual esteu treballant és perillós. Abans de començar, desendolleu l'equip o extremeu les precaucions si, per treballar amb l'equip, l'heu de connectar.

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-
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- 本产品的维护信息仅供专业服务人员使用，并不打算让其他人使用。
- 本产品在拆卸、维修时，遭受电击或人员受伤的危险性会增高，专业服务人员对这点必须有所了解，并采取必要的预防措施。
-
  切记：当您看到此符号时，说明在您工作的产品区域有危险电压的存在。请在开始操作前拔掉产品的电源线，或者在产品必须使用电源来执行任务时，小心从事。

Preface

This manual contains maintenance procedures for service personnel. It is divided into the following chapters:

1. **General information** contains a general description of the printer and the maintenance approach used to repair it. Special tools and test equipment, as well as general environmental and safety instructions, are discussed.
2. **Diagnostic information** contains an error indicator table, symptom tables, and service checks used to isolate failing field replaceable units (FRUs).
3. **Diagnostic aids** contains tests and checks used to locate or repeat symptoms of printer problems.
4. **Repair information** provides instructions for making printer adjustments and removing and installing FRUs.
5. **Connector locations** uses illustrations to identify the connector locations and test points on the printer.
6. **Preventive maintenance** contains the lubrication specifications and recommendations to prevent problems.
7. **Parts catalog** contains illustrations and part numbers for individual FRUs.
   Appendix A contains service tips and information.
   Appendix B contains representative print samples.

Navigation buttons

This manual contains navigation buttons in the right margin of each page, making it easier and quicker to navigate.

Button	Description
Previous	Click to move the document view backward by one page.
Next	Click to move the document view forward by one page.
Go Back	Click to return to the last page viewed.

Conventions

Note: A note provides additional information.

Warning: A warning identifies something that might damage the product hardware or software.

Caution statement::

	CAUTION This type of caution indicates there is a danger from hazardous voltage in the area of the product where you are working. Unplug the product before you begin, or use caution if the product must receive power in order to perform the task.

1. General information

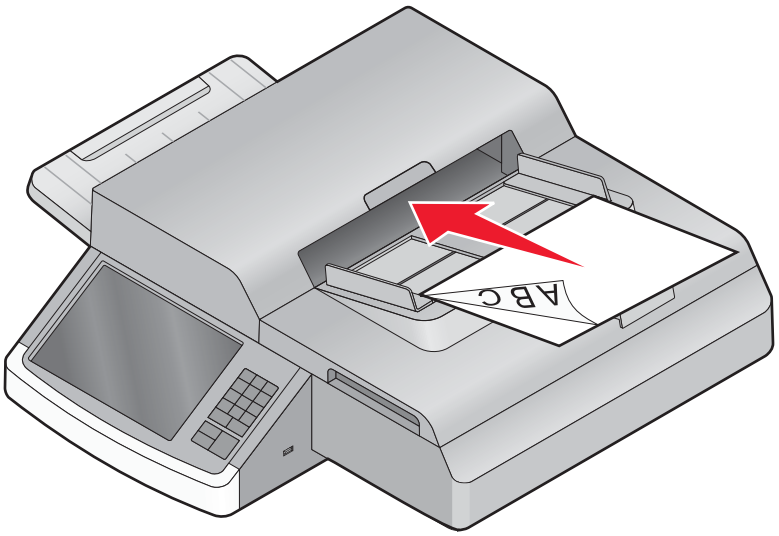
Overview

The Lexmark™ 6500e option is a multifunction solution that offers integrated print, copy, fax, and network-scanning capabilities for large workgroups. The Lexmark™ 6500e option enables a user to make quick copies, to change the settings on the touch screen to perform specific copy jobs, to send faxes to multiple fax destinations at the same time, to scan documents to send to an e-mail address, computer, a USB flash memory drive, or FTP destination, and to scan documents and send them to another printer (PDF by way of FTP). When the printer is converted into a multifunction device, all printer messages will appear on the Lexmark™ 6500e option touch screen.

Features

Understanding the ADF and scanner glass

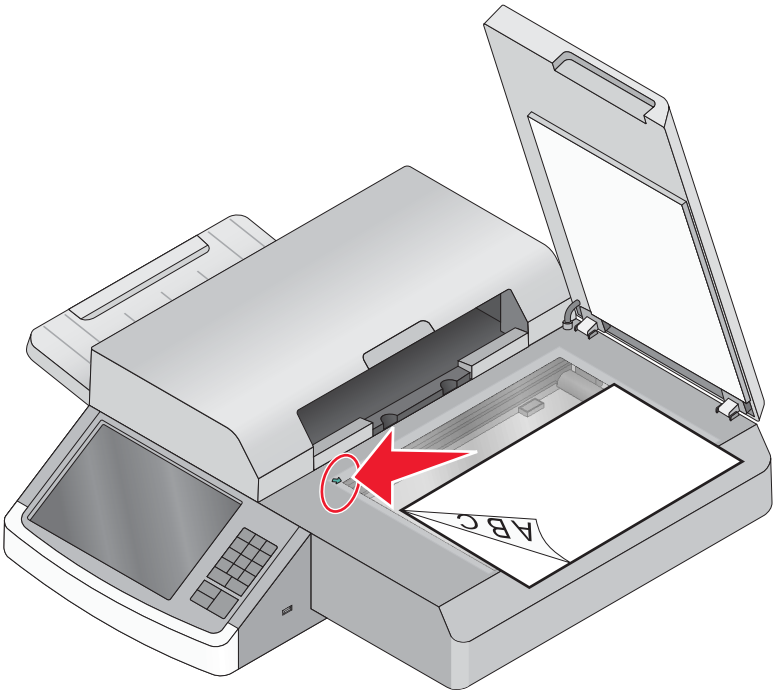
The ADF is used for multiple pages, including duplex pages.



To use the ADF:

- Load letter- and A4-size documents into the ADF facedown, long edge first.
- Load legal- and A3-size documents into the ADF facedown, short edge first.
- Load up to 100 sheets of plain paper in the ADF tray.
- Scan sizes from 50.8 x 76.2 mm (2 x 3 in.) to 299.7 x 431.8 mm (11.8 x 17 in.).
- Scan documents with different paper sizes (letter and legal).
- Scan media weights from 52 to 120 g/m2 (12 to 34 lb).
- Do not load postcards, photos, small items, transparencies, photo paper, or thin media (such as magazine clippings) into the ADF. Place these items on the scanner glass.

The scanner glass is used for singles pages or book pages, small items (such as postcards or photos), transparencies, photo paper, or thin media (such as magazine clippings).



To use the scanner glass:

- Place a document facedown on the scanner glass in the lower left corner.
- Scan or copy documents up to 114 mm x 140 mm (4.5 x 5.5 in.) to 216 x 356 mm (8.5 x 11 in.).
- Copy books up to 25 mm (1 in.) thick.

For information on the operator panel, see **“Understanding the operator panel and menus” on page 3-1**.

Tools required for service

Flat-blade screwdriver
#1 Phillips screwdriver, magnetic
#2 Phillips screwdriver, magnetic
#2 Phillips screwdriver, magnetic short-blade
Torx screwdrivers
Needlenose pliers
Diagonal side cutters
Spring hook
Feeler gauges
Analog or digital multimedia

Acronyms

ADF	Automatic Document Feeder
CCD	Charge-Couple Device
CCFL	Cold Cathode Fluorescent Lamp
CDB	Command Descriptor Blocks
CRU	Customer Replaceable Unit
ESD	Electrostatic Discharge
FRU	Field Replaceable Unit
HV	High Voltage
LCM	Liquid Crystal Module
LED	Light-Emitting Diode
LV	Low Voltage
MFD	Multi Function Device
PCBA	Printed Circuit Board Assembly
PPM	Page per minute
SPM	Sides per minute
V ac	Volts alternating current
V dc	Volts direct current

2. Diagnostic information

Start

CAUTION

Unplug all power from the electrical outlet before you connect or disconnect any cable or electronic board or assembly for personal safety and to prevent damage to the scanner. Disconnect any connections between the scanner and the printer.

This chapter describes two methods to solve the operational problems. The first relies on the scanner internal diagnostics to report error codes. The second uses troubleshooting techniques to isolate the problem. In many cases, the internal error codes will help you to locate the source of the problem quickly. If no error codes are reported, or if the error codes do not locate the source of the problem, refer to the Symptom Tables.

- If you have an error message or user message, check the following:
  - **“Error codes and messages” on page 2-3**
  - **“Service checks” on page 2-5**
- Does the POR stop? Check the **“Power-On Self Test (POST) sequence” on page 2-2**.
- Do you have a symptom, rather than an error message? Check the **“Symptom tables” on page 2-2**.
- Additional information can be found at the following locations:
  - **“Understanding the operator panel and menus” on page 3-1**
  - **“Accessing the service menus” on page 3-7**
  - **“Service checks” on page 2-5**

Note: There may be scanner error messages that are not contained in this service manual. Call your next level of support for assistance.

Power-On Self Test (POST) sequence

When you turn the printer and scanner on, it performs a Power-On Self Test. Check for correct POST functioning by observing the following:

1. The printer LED (green light) turns on.
2. The operator panel turns on.
3. The operator panel displays counting the memory.
4. The operator panel displays a progression bar with the Lexmark splash logo.
5. You can hear the scanner doing a scanner calibration.
6. You can hear the printer starting up. It takes the printer longer to start up from a cold start rather than from a warm start.

Symptom tables

The tables in this section provide detailed troubleshooting information.

Frequent paper jam, multifeed or skew	See **“Frequent paper jam, multifeed or skew” on page 2-5**.
False multifeed	See **“False multifeed” on page 2-6**.
The power does not come on, or communication lost	See **“The power does not come on” on page 2-7**.
Voided line in scanned image (ADF or Flatbed)	See **“Voided line in scanned image (ADF or flatbed)” on page 2-8**.
Voids in flatbed scanned image	See **“Voids in flatbed scanned image” on page 2-8**.
Image blank or distorted (flatbed)	See **“Image blank or distorted (flatbed)” on page 2-9**.
Image blank or distorted (ADF-front side of scanned page)	See **“Image blank or distorted (ADF-front side of scanned page)” on page 2-10**.
Image blank or distorted (ADF-back side of scanned page)	See **“Image blank or distorted (ADF-back side of scanned page)” on page 2-11**.
Strange sound generated (ADF)	See **“Strange sound generated (ADF)” on page 2-11**.
Strange sound generated (flatbed)	See **“Strange sound generated (flatbed)” on page 2-12**.

Error codes and messages

For information on error codes 910-999, refer to the printer's service manual.

Error code	Type	Description	Action
840.01	Scanner	The scanner has been manually disabled.	Enter the configuration menu to re-enable the scanner.
840.02	Scanner	The scanner has automatically been disabled by the controller.	Enter the configuration menu to re-enable the scanner.
841.XX	Scanner	The scanner image ASIC has failed.	1. Check all connections on the scanner engine board. 2. Replace the scanner engine board assembly if problem remains. See **"Engine board removal" on page 4-67**. 3. Replace the controller board. See **"Controller board removal" on page 4-58**.
842.XX	Scanner	The controller board has lost communication with the scanner engine board.	1. Check all connections on the scanner engine board. 2. Replace the scanner engine board assembly if problem remains. See **"Engine board removal" on page 4-67**. 3. Replace the controller board. See **"Controller board removal" on page 4-58**.
843.XX	Scanner	The scanner carriage home position detection failed.	1. Turn the machine off/on. 2. See the home position service check.
844.00	Scanner	The lower ADF scanner module exposure lamp has failed.	Replace the lower ADF scan module.
844.01	Scanner	The upper ADF scanner module exposure lamp has failed	Replace the upper ADF scan module.
845.02	Scanner	Lower scanner module cable has failed	Replace the lower scanner module cable.
845.03	Scanner	Upper scanner module cable has failed	Replace the upper scanner module cable.
900.00-900.99 (except for 900.05)	Scanner	An unrecoverable controller board software error occurred while an unknown process was running.	See **"900.xx System software error" on page 2-13**.
955.XX	Scanner	The Code ROM or NAND flash failed the Cyclic Redundancy Check (CRC), or the NAND experienced an uncorrectible multi-bit failure.	Replace the controller board. See **"Controller board removal" on page 4-58**.

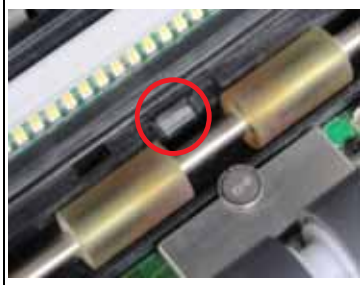
Paper jam error codes

For information on error codes 200-279, refer to the printer's service manual.

Error code	Type	Description	Action
280.06	Scanner	Paper missing	This error is caused by paper not being detected at the ADF paper present sensor. Check the sensor for proper connection and possible damage.
283.01	Scanner	Scanner jam	This is caused by paper being detected by the media sensor at start up. See **"Frequent paper jam, multifeed or skew" on page 2-5**.
283.03	Scanner	Scanner jam	This is caused by the paper jam sensor not detecting movement of reluctor wheel connected to the paper jam idler roller at the right time. See **"Frequent paper jam, multifeed or skew" on page 2-5**.
283.05	Scanner	Scanner jam	This is caused by the paper jam sensor detecting movement of the reluctor wheel connected to the paper jam idler roller for too long. See**"Frequent paper jam, multifeed or skew" on page 2-5**.
290.11	Scanner	Scanner ADF cover open jam	Occurs when the ADF cover open sensor is opened during the middle of a scan. Check sensor for proper connection and possible damage.
295.20	Scanner	Multifeed sensor on	This is caused by the multifeed sensor detecting the presence of more than one sheet of paper. See **"False multifeed" on page 2-6**.

Service checks

Frequent paper jam, multifeed or skew

Step	Action and Question	Yes	No
1	Is the paper correctly set in the tray?	Go to step 2.	Properly position the paper in the ADF
2	Is the specified paper used?	Go to step 3.	Use the correct media
3	Is there a foreign object or paper debris in the ADF paper path?	Clear the debris. Also check the media sensor and mirror for paper dust and debris. 	Go to step 4.
4	Is the separator pad dirty, damaged or worn?	Clean the separator pad. Replace if the problem remains. See **“Separator pad removal” on page 4-8**.	Go to step 5.
5	Is the pick roller dirty, damaged or worn?	Clean pick roller. Replace if the problem remains. See **“Pick roller removal” on page 4-3**.	Go to step 6.
6	Are the feed rollers dirty, damaged or worn?	Clean feed rollers. Replace if the problem remains. See **“Feed rollers removal” on page 4-88**.	Go to step 7.
7	Does the problem remain?	Replace the paper jam sensor and idler roller. See **“Paper jam sensor removal” on page 4-86**.	Problem solved

False multifeed

Step	Action and Question	Yes	No
1	Are sheets being multifeed into ADF?	See **"Frequent paper jam, multifeed or skew" on page 2-5**.	Go to step 2.
2	Perform multifeed sensor calibration on **page 28**. Does the problem remain?	Go to step 3.	Problem solved
3	Check the multifeed sensor for paper dust and debris. Clean the multifeed sensor. Does the problem remain?	Go to step 4.	Problem solved
4	Although working properly, the multifeed sensor occasionally reports a false multifeed when labeled and other difficult media is scanned. In some cases, the multifeed sensor must be disabled to allow scanning of this type of media. Is difficult media being scanned?	Disable the multifeed sensor in the configuration menu.	Replace multifeed sensor and repeat calibration. See **"Multifeed sensor removal" on page 4-39**.

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The power does not come on

Step	Action and Question	Yes	No
1	Is the AC cord unplugged?	Plug in cord	Go to step 2.
2	Has the POR sequence been followed?	Go to step 3.	See **“Power On Reset (POR) sequence” on page 3-6**.
3	Remove the engine access cover to reveal the power supply. Disconnect the cable from CN201 on the power supply and check for the following voltages: CN201-1 +24V CN201-2 GND CN201-3 +5V CN201-4 GND CN201-5 +5V CN201-6 GND Do the measurements on the power supply match the above values?	Go to step 4.	Replace the power supply. See **“Power supply removal” on page 4-65**.
4	Reconnect the cable to CN201 of the power supply. Remove the controller board cover and disconnect the cable from J1 on the controller board. Check the voltages listed in step 3 at the end of the cable connected into CN201 of the power supply. Do the measurements match the values in step 3?	Go to step 5.	Replace the power supply to controller board cable
5	Reconnect the cable to J1 of the controller board. Disconnect the cable from J2 on the controller board. Do the measurements on the power supply match the values in step 3?	Go to step 6.	Replace the engine board to controller board cable
6	Reconnect the cable to J2 of the controller board. Disconnect the cable from J9 on the Engine Board. Do the measurements on the power supply match the values in step 3?	Replace the engine board.	Replace the engine board to controller board cable

Voided line in scanned image (ADF or flatbed)

Step	Action and Question	Yes	No
1	Inspect the scan module associated with the side of page being scanned (lower ADF scan module for front side, upper ADF scan module for back side, or flatbed scan module) for debris on the lens. Also check the glass in the ADF for debris. Is there debris on the lens or ADF glass?	Clean the debris from the ADF glass or lens of the affected scan module.	Go to step 2.
2	Check the connection of the cables going to the affected scan module. Are the cables properly connected and free from damage?	Replace the affected scan module.	Reseat or replace cable(s).

Voids in flatbed scanned image

Step	Action and Question	Yes	No
1	Inspect the flatbed glass. Is the glass dirty?	Clean the glass.	See **“Image blank or distorted (flatbed)” on page 2-9**.

Image blank or distorted (flatbed)

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Step	Action and Question	Yes	No
1	Inspect the flatbed cables for poor connection to the flatbed scanner module. Also check for damage to the cable near the scanner module connector due to improper installation or fractures from multiple scan cycles. Is the cable damaged?	Replace the flatbed scanner module cables. See **"Flatbed scanner cables removal" on page 4-61**.	Go to step 2.
2	Check the following voltages on J6 of the Engine Board: J6-1 +24V J6-3 +24V J6-6 GND J6-9 GND J6-12 GND J6-15 GND J6-16 GND J6-17 +3.3V J6-18 +3.3V Do the measurements on the engine board match the above values?	Go to step 3.	Replace the engine board. See **"Engine board removal" on page 4-67**.
3	Check the following voltages on J24 of the Controller Board: J24-1 GND J24-3 +24V J24-4 +24V J24-5 GND J24-13 GND J24-15 GND J24-18 GND J24-21 GND J24-24 GND J24-27 GND J24-30 GND Do the measurements on the controller board match the above values?	Replace the flatbed scanner module. See **"Flatbed scanner removal" on page 4-51**.	Replace the controller board. See **"Controller board removal" on page 4-58**.

Image blank or distorted (ADF-front side of scanned page)

Step	Action and Question	Yes	No
1	Is the separator pad dirty, damaged or worn?	Clean separator pad. Replace if problem remains. See **“Separator pad removal” on page 4-8**	Go to step 2.
2	Is the pick roller dirty, damaged or worn?	Clean pick roller. Replace if problem remains. See **“Pick roller removal” on page 4-3**.	Go to step 3.
3	Are the feed rollers dirty, damaged or worn?	Clean feed rollers. Replace if problem remains. See **“Feed rollers removal” on page 4-88**.	Go to step 4.
4	Check the cable connection between the lower ADF scanner module and J5 on the controller board. Is the cable properly seated and free from damage?	Go to step 5.	Reconnect or replace cable
5	Check the following voltages on J5 of the Controller Board: J5-1 GND J5-4 GND J5-7 GND J5-10 GND J5-13 GND J5-16 GND J5-18 GND J5-26 GND J5-27 +24V J5-28 +24V J5-30 GND J5-31 GND J5-32 GND Do the measurements on the controller board match the above values?	Replace the Lower ADF scanner module. See **“Lower ADF scanner module removal” on page 4-78**.	Replace the controller board. See **“Controller board removal” on page 4-58**.

Image blank or distorted (ADF-back side of scanned page)

Step	Action and Question	Yes	No
1	Is the separator pad dirty, damaged or worn?	Clean separator pad. Replace if problem remains. See **"Separator pad removal" on page 4-8**.	Go to step 2.
2	Is the pick roller dirty, damaged or worn?	Clean pick roller. Replace if problem remains. See **"Pick roller removal" on page 4-3**.	Go to step 3.
3	Are the feed rollers dirty, damaged or worn?	Clean feed rollers. Replace if problem remains. See **"Feed rollers removal" on page 4-88**.	Go to step 4.
4	Check the cable connection between the upper ADF scanner module and J6 on the controller board. Is the cable properly seated and free from damage?	Go to step 5.	Reconnect or replace the cable.
5	Check the following voltages on J6 of the Controller Board: J6-1 GND J6-4 GND J6-7 GND J6-10 GND J6-13 GND J6-16 GND J6-18 GND J6-26 GND J6-27 +24V J6-28 +24V J6-30 GND J6-31 GND J6-32 GND Do the measurements on the controller board match the above values?	Replace the upper ADF scanner module. See **"Upper ADF scanner module removal" on page 4-35**.	Replace the controller board. See **"Controller board removal" on page 4-58**.

Strange sound generated (ADF)

Step	Action and Question	Yes	No
1	Is the paper correctly set in the ADF input tray?	Go to step 2.	Properly position paper in the ADF input tray.
2	Replace the pick roller assembly. Does the problem remain?	Go to step 3.	Problem solved
3	Replace the feed rollers. Does the problem remain?	Go to step 4.	Problem solved
4	Replace the paper jam idler roller. Does the problem remain?	Replace the idler rollers.	Problem solved

Strange sound generated (flatbed)

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Step	Action and Question	Yes	No
1	Is the flatbed scanner module locked?	Unlock the flatbed scanner module.	Go to step 2.
2	Inspect the flatbed cables for poor connection to the flatbed scanner module. Also check for damage to the cable near the scanner module connector due to improper installation or fractures from multiple scan cycles. Is the cable damaged?	Replace the flatbed scanner module cables. See **“Flatbed scanner cables removal” on page 4-61**.	Go to step 3.
3	Inspect the flatbed scanner module belt. Is the belt damaged?	Replace the flatbed scanner module belt. See **“Flatbed scanner removal” on page 4-51**.	Replace the flatbed scanner module. See **“Flatbed scanner removal” on page 4-51**.

900.xx System software error

There are different types of 900.xx errors that can occur. There may be a communication problem (Bad cable, network connection, and so on) software issue, or a hardware problem with the controller board, or ISP (Internal solutions port). The communication and software aspects should be checked first. Determine if the problem is constant or intermittent. Use the troubleshooting procedure below to isolate the issue. Take any notes as instructed. You will need that information in the event you need to contact your next level support.

Note: Before troubleshooting, determine the operating system used when the error occurred. If possible determine whether a PostScript or PCL file was sent to the device when the error occurred. Ask the customer which Lexmark Solutions applications are installed on the device.

Step	Action and questions	Yes	No
1	POR the device. **Does the error reoccur?**	Go to step 2.	Problem resolved.
2	• Write down the exact 900.xx error code displayed on the device. • Turn the device off. • Clear the print queues. • Disconnect all communication cables, and remove all memory options. • Remove all ISP and modem cards. • Restart the device into diagnostic mode. **Does the 900.xx error reoccur during startup?**	Go to step 3.	Go to step 6.
3	Check all the cables connected to the controller board for proper connectivity. **Are the cables properly connected?**	Go to step 5.	Go to step 4.
4	Properly connect the cables to the controller board. Restart the device into diagnostic mode. **Does the 900.xx error reoccur during startup?**	Go to step 5.	Go to step 6.
5	Replace the controller board, and restart the device. **Does this fix the problem?** **Note:** If an error, different from the original 900.xx, is displayed, consult the service check for that error.	Problem resolved.	Go to step 31.
6	Print the following: • Error log • Menu settings page • Network settings page **Does the 900.xx error reoccur while these pages were printing?**	Go to step 31.	Go to step 7.
7	Re-attach the communications cable. Restart the printer to operating mode. Send the printer a print job. **Does the 900.xx error reoccur?** **Note:** Before performing this step, write down this information about the file being sent to the printer: • Application used • Operating system • Driver type • File type (PCL, PostScript, XPS, etc.)	Go to step 8.	Go to step 10.

Step	Action and questions	Yes	No
8	Restart the printer to operating mode. Send a different print job to the device. **Does the 900.xx error reoccur?**	Go to step 9.	Go to step 10.
9	Upgrade the firmware. Contact your next level of support for the correct firmware level to use. Restart the printer to operating mode. Send the printer a print job. **Does the 900.xx error reoccur?**	Go to step 31.	Go to step 10.
10	Is the device a Multi Function Printer?	Go to step 11.	Go to step 13.
11	Run a copy job. **Does the 900.xx error reoccur?**	Go to step 31.	Go to step 12.
12	Run a scan to PC job. **Does the 900.xx error reoccur?**	Go to step 31.	Go to step 13.
13	Is there optional memory installed?	Go to step 14.	Go to step16.
14	Reinstall the memory, and send a print job to the device. **Does the 900.xx error reoccur?**	Go to step 15.	Go to step 16.
15	Install a Lexmark recommended memory option. Send a print job to the device. **Does the 900.xx error reoccur?**	Go to step 31.	Problem resolved.
16	Is there a modem installed on the device?	Go to step 17.	Go to step 21.
17	Reinstall the modem. Restart the device. **Does the 900.xx error reoccur?**	Go to step 18.	Go to step 20.
18	Upgrade the firmware. Contact your next level of support for the correct firmware level to use. Restart the printer to operating mode. Send the printer a print job. **Does the 900.xx error reoccur?**	Go to step 19.	Problem resolved.
19	Replace the modem. Restart the device. **Does the 900.xx error reoccur?**	Go to step 31.	Problem resolved.
20	Run a fax job. **Does the 900.xx error reoccur?**	Go to step 31.	Go to step 21.
21	Are there any ISP (internal solutions port) options installed?	Go to step 22.	Problem resolved.
22	Reinstall the first ISP option. Restart the device. **Does the 900.xx error reoccur?**	Go to step 24.	Go to step 23.
23	Run a job to test the option. **Does the 900.xx error reoccur?**	Go to step 24.	Go to step 26.
24	Upgrade the firmware. Contact your next level of support for the correct firmware level to use. Restart the printer to operating mode. **Does the 900.xx error reoccur?**	Go to step 25.	Problem resolved.

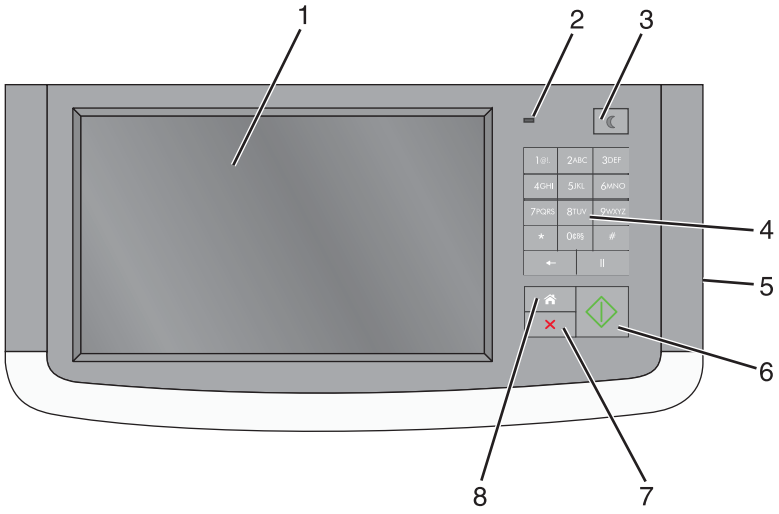
Step	Action and questions	Yes	No
25	Replace the faulty ISP option. Restart the device. Does the 900.xx error reoccur?	Go to step 31.	Go to step 26.
26	Are there any more ISP options to install?	Go to step 27	Problem resolved.
27	Install the next ISP option. Restart the device. Does the 900.xx error reoccur?	Go to step 29.	Go to step 28.
28	Run a job to test the option. Does the 900.xx error reoccur?	Go to step 29.	Go to step 26.
29	Upgrade the firmware. Contact your next level of support for the correct firmware level to use. Restart the printer to operating mode. Does the 900.xx error reoccur?	Go to step 30.	Go to step 26.
30	Replace the faulty ISP option. Restart the device. Does the 900.xx error reoccur?	Go to step 31.	Go to step 26.
31	Contact your next level of support. You will need the following information for them: • Exact 900.xx error digits and complete error message • Printed menu settings page • Printed network settings page • Device error log • A sample print file if error appears to be isolated to a single file • File/Application used if error is related to specific print file • Device Operating System • Driver used (PCL/PS) • Frequency of the occurrence of the error		

3. Diagnostic aids

This chapter provides basic information to help you navigate the printer menus and explains the tests and procedures used to identify printer failures and verify repairs have corrected the problem.

Understanding the operator panel and menus

Operator panel



Item		Description
1	Display	Shows the status of the printer
2	Indicator light	**Off**– The scanner is off. **Blinking green**– The scanner is warming up, processing data, or printing. **Solid green**– The scanner is on but idle. **Solid red**– Operator intervention is required.
3	Sleep	Enables Sleep Mode The following actions wake the scanner from Sleep Mode: • Touching the screen or any hard buttons • Sending a print job from a computer • Performing a Power-on Reset (POR)
4	Keypad	Lets you enter numbers, letters, or symbols
5	USB thumbdrive	USB port for thumbdrive
6	Submit	Saves settings changes
7	Stop/Cancel	Stops all scanner activity **Note:** A list of options appears once `Stopped` appears on the display.
8	Home	Returns to the home screen

Understanding the home screen

Buttons appearing on the home screen may vary depending on home screen customization settings.

Possible buttons and icons on the home screen

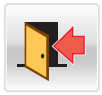
Item	Description
Copy	Opens the Copy menu
E-mail	Opens the E-mail menu
Scan	Opens the Scan menu
Fax	Opens the Fax menu
Menus	Opens the administrative menus when `Ready` appears on the display
FTP	Opens the FTP menu **Note:** This option must be set up by a system administrator before it appears on the display.
Status message bar	Shows the current printer status such as Ready or Busy **Note:** Make sure Ready appears before performing any printer task. • Shows printer conditions such as `Toner Low` or `Cartridge Low` • Shows intervention messages and gives instructions for the printer to continue processing
Status/Supplies	Displays a warning or error message whenever the printer requires intervention to continue processing Touch this to access the messages screen for more information on the message, and how to clear it.
Tips	Opens context-sensitive Help information on the touch screen **Note:** All menus have a Tips button.
USB	Displays files on a flash drive
Bookmarks	Allows you to create, organize, and save a set of bookmarks (URLs) into a tree view of folders and file links
Held Jobs	Displays all held jobs
Change Language (not pictured)	Allows you to change the primary language and reports on the display, and will remain in effect until changed
Release Held Fax (not pictured)	If this button is shown, then there are held faxes with a scheduled hold time previously set. To access the list of held faxes, touch this button.
Lock Device (not pictured)	This button appears when the printer is unlocked and the Printer Lockout Personal Identification Number (PIN) has been set. Touching this button opens a PIN entry screen. Enter the correct PIN to lock the operator panel.

Item	Description
Unlock Device (not pictured)	This button appears when the printer is locked. The operator panel buttons and shortcuts cannot be used while this appears. Touching this button opens a PIN entry screen. Enter the correct PIN to unlock the printer control panel.
Cancel Jobs (not pictured)	Opens the Cancel Jobs screen. The following items are available under the Print, Fax, and Network headings: • Print job • Copy job • Fax profile • FTP • E-mail send Each heading shows up to three jobs per screen. If more than three jobs exist in a column, then an arrow appears enabling you to scroll through the jobs. Select a job to cancel it.

Using the touch screen

Sample touch screen

Button	Function
Submit	Saves settings changes
Sample copy	Prints a sample of a document or image
Right arrow	Opens the menu or options list beside it

Button	Function
Right scroll increase	Increases a value
Left scroll decrease	Decreases a value
Home	Returns to the home screen
Exit 	Exits from the current screen to the home screen
Tips	Opens context-sensitive Help on the touch screen

Other touch-screen buttons

Icon	Function
Accept	Confirms selections and moves to the next screen
Stop/Cancel	• Cancels an action or selection • Cancels out of a screen and return the previous screen
Return	Navigates back to the previous screen
Unselected radio button	Indicates that an item is not selected

Icon	Function
Selected radio button	Indicates a selection
Index	Displays information about the key functions of the printer, including instructions on how to operate it
Search	Lets you search for files and menus
Warning	Indicates a warning or error condition

Power On Reset (POR) sequence

The POR sequence must be followed in order for the printer and scanner to properly power up and establish communications with each other and the network. Follow one of the two POR sequences:

Printer and scanner

1. With both the printer and scanner previously turned off, turn on the printer.
2. Press and hold button pattern for desired service menu, or no buttons for user mode.
3. Turn on the scanner within 20 seconds of turning on the printer.
4. Release the buttons when the splash screen appears.

Scanner only

Note: The scanner only POR applies only to a printer/scanner that was already powered up prior to the POR. (This is useful for a service technician who needs to power in and out of service menus.)

1. Turn off the scanner.
2. Press and hold button pattern for desired service menu, or no buttons for the user mode.
3. Turn on the scanner within 20 seconds of turning off the scanner.
4. Release the buttons when the splash screen appears.

Administrative menus

See the menu map for a brief overview of the menus available from the operator panel.

Select a menu or menu item for more details.

Supplies Menu
Replace Supplies
Separator Pad
Pick Roller

Security
Miscellaneous
Security Settings
Confidential Print
Disk Wiping
Security Audit Log
Set Date and Time

Paper Menu
Default Source
Paper Size/Type
Configure MP
Envelope Enhance
Paper Texture
Custom Scan Sizes
Substitute Size
Paper Weight
Paper Loading
Custom Types
Custom Names
Universal Setup

Settings
General Settings
Copy Settings
Fax Settings
E-Mail Settings
Flash Drive Menu
Print Settings
Image Menu
FTP Settings

Reports
Menu Settings Page
Device Statistics
Network Setup Page
Network [x] Setup Page
Shortcut list
Fax Job Log
Fax Call Log
Copy Shortcuts
E-Mail Shortcuts
Fax Shortcuts
FTP Shortcuts
Profiles List
Print Fonts
Print Directory
Print Demo
Asset Report

Manage Shortcuts
Fax Shortcuts Security
E-mail Shortcuts
FTP Shortcuts
Copy Shortcuts
Profile Shortcuts

Network/Ports
Active NIC
Standard Network
Standard USB
SMTP Setup

Help
Print All Guides
Copy Guide
E-mail Guide
Fax Guide
FTP Guide
Print Defects Guide
Information Guide
Supplies Guide

Lock Scanner Head

Accessing the service menus

There are different test menus that can be accessed during POR to identify problems with the scanner. See the table below for the POR sequences.

Note: To access printer service menus, disconnect the scanner communications card from the printer controller board and follow the POR sequence in the printer service manual.

Menu	Scanner button pattern	Description
Diagnostics menu		The Diagnostics menu group contains the settings and operations used while manufacturing and servicing the printer. For more information, see **"Diagnostics mode" on page 3-15**.
Configuration menu		The Configuration menu group contains a set of menus, settings, and operations which are infrequently required by a user. Generally, the options made available in this menu group are used to configure a printer for operation. See **"Configuration menu" on page 3-9** for more information.
Clear NVRAM (non-critical)		This action will clear NVRAM values.
Invalid engine code mode		This mode is used if the machine has invalid code and needs the correct code loaded. After entering this mode, the firmware code can be updated.
Bypass firmware card		Holding this button during POR will cause the scanner to boot with code soldered on the controller board and bypass an installed firmware card.

The following menus are accessed from a scanner at the ready state:

Menu	Steps	Description
SE menu	At the scanner, perform the following steps: 1. From the Admin menu, navigate to the home screen. 2. Press the button sequence: * * 4 1 1 3. The SE Menu appears.	This enables the SE menu.
Network SE menu	At the scanner, perform the following steps: 1. From the Admin menu, navigate to: **Network/ Ports > Standard Network > STD Network Setup menu**. 2. Press the button pattern below: 3. Release the buttons when the Network SE Menu appears.	This enables the Network SE menu.

Configuration menu

The Configuration menu contains a set of menus, settings, and operations which are infrequently used by a user. Generally, the options made available in this menu are used to configure a printer for operation.

An asterisk (*) in the value list in the following menus indicates the default value.

The following are available from the Configuration menu:

Configuration Menu

USB Scan To Local	See **“USB Scan to Local” on page 3-10**.
Print Quality Pages	See **“Print Quality Pages” on page 3-10**.
Reports	See **“Reports” on page 3-10**.
SIZE SENSING	See **“SIZE SENSING” on page 3-10**.
Panel Menus	See **“Panel Menus” on page 3-10**.
PPDS Emulation	See **“PPDS Emulation” on page 3-10**.
Factory Defaults	See **“Factory Defaults” on page 3-10**.
Energy Conserve	See **“Energy Conserve” on page 3-10**.
Fax Low Power Support	See **“Fax Low Power Support” on page 3-11**.
Min Copy Memory	See **“Min Copy Memory” on page 3-11**.
Num Pad Job Assist	See **“NumPad Job Assist” on page 3-11**.
Format Fax Storage	See **“Format Fax Storage” on page 3-11**.
Fax Storage Location	See **“Fax Storage Location” on page 3-11**.
ADF Edge Erase	See **“ADF Edge Erase” on page 3-11**.
FB Edge Erase	See **“FB Edge Erase” on page 3-12**.
Scanner Manual Registration	See **“Scanner Manual Registration” on page 3-12**.
Disable Scanner	See **“Disable Scanner” on page 3-12**.
Paper Prompts	See **“Paper Prompts” on page 3-12**.
Envelope Prompts	See **“Envelope Prompts” on page 3-12**.
Action for Prompts	See **“Action for Prompts” on page 3-12**.
Jobs On Disk	See **“Jobs On Disk” on page 3-12**.
Disk Encryption	See **“Disk Encryption” on page 3-13**.
Erase All Information on Disk	See **“Erase All Information on Disk” on page 3-13**.
Wipe All Settings	
Font Sharpening	See **“Font Sharpening” on page 3-13**.
Require Standby	See **“Require Standby” on page 3-13**.
UI Automation	
Key Repeat Initial Delay	See **“Key Repeat Initial Delay” on page 3-13**.
Key Repeat Rate	See **“Key Repeat Rate” on page 3-13**.
Wiper Message	
Clear Custom Status	See **“Clear Custom Status” on page 3-13**.
USB Speed	See **“USB Speed” on page 3-13**.
USB PnP	See **“USB PnP” on page 3-14**.
Automatically Display Error Screens	See **“Automatically Display Error Screens” on page 3-14**.
Exit Config Menu	

USB Scan to Local

When set to Off, this setting tells the USB device driver to enumerate as a USB Simple device. When this is set to on, USB device driver enumerates as a USB Composite device (multiple interfaces).

Print Quality Pages

The Print Quality Test consists of five pages. Pages one and two contain a mixture of graphics and text. The remainder of the pages only contain graphics. Use this test to identify print quality problems. The Test Pages must be printed on A4, Legal, or Letter paper.

Reports

From this menu you can print the Menu Settings Page or the Event Log.

SIZE SENSING

Automatic size sensing can be disabled or enabled in this menu. Only paper sources that support Auto Size Sensing are displayed.

1. Select **SIZE SENSING** from the Configuration menu.
2. Select a tray. Only those trays with size sensing appear. Select **Auto** to turn size sensing on for that tray, or select **Off** to disable size sensing.
3. Touch **Back** to exit.

Panel Menus

Disabling Panel Menus prohibits users from modifying any setting or executing any operation available in the Ready Menu group.

PPDS Emulation

This appears only if the PPDS interpreter is available.

Factory Defaults

The customer can restore either the network settings or the base printer settings to their factory default values. When Restore Base is selected, non-critical base printer NVRAM settings are restored. When Restore STD Net is selected, all network NVRAM settings are restored to their factory default settings. This option is available only on models with an integrated network adapter. When Restore LES is selected, all non-standard applications are removed and all framework and standard application settings are reset to factory default settings.

Energy Conserve

When Energy Conserve is on, the customer does not have access to disable the Sleep Mode function. When Energy Conserve is off, Disable appears as an additional menu item in the Sleep Mode menu. This setting only affects the values that are displayed in the Sleep Mode menu.

Fax Low Power Support

This menu has the following settings:

Auto– The printer checks the Caller ID Pattern setting to determine if the fax chip should enter low power mode.
Permit Sleep– The fax chip enters low power mode when needed, regardless of the Caller ID Patter setting.
Disable Sleep– The fax chip never enters low power mode.

Min Copy Memory

This menu lets you select the amount of memory dedicated to storing copy jobs. The values may be 25 MB, 35 MB, 50 MB, 80 MB, and 100 MB. The default is 80 MB. Values will be displayed only if the amount of installed DRAM is at least twice the amount of the value. For example, at least 200 MB of installed DRAM is required to display the 100 MB selection.

NumPad Job Assist

When this setting is set to On, a user can initiate scanner-related jobs, and enter values for a limited number of settings related to those jobs, using the keypad.

Touch **Back** to exit without changing the setting.

Format Fax Storage

This setting enables you to format the non-volatile storage used for storing faxes.

Note: If an advanced password has been established, you must enter this password in order to change the setting.

Fax Storage Location

This menu allows you to select either NAND or the printer hard disk (Disk) as the fax storage location. If the printer hard disk is removed, then this menu no longer appears.

1. In the Color Alignment sub menu, Select A.
2. Look at item A on the sheets.
3. Look for the numerical value where the color lie is aligned with the two black lines on each end.
   Note: In the example above, 10 would be the value to enter.
4. Using the arrows on the touch screen, scroll to the value that matches the correct value on the printout.
5. Touch the check mark.
6. Repeat steps 3 through 6 for each alpha value on the printout.

ADF Edge Erase

The ADF Edge Erase setting specifies, in millimeters, the size of a border around the scanned image that will be erased. For copies, the printed page will always have at least a 2-mm no-print border. The larger of the 2-mm no-print border and the Edge Erase setting will be used in this situation.

FB Edge Erase

The FB Edge Erase setting specifies, in millimeters, the size of a border around the scanned image that will be erased. For copies, the printed page will always have a at least a 2-mm no-print border. The larger of the 2-mm no-print border and the Edge Erase setting will be used in this situation.

Scanner Manual Registration

Use this menu to adjust the scanner margins after you replace any of the following parts:

- Flatbed scanner assembly
- Front ADF scanner assembly
- Back ADF scanner assembly

Note: The Scanner Manual Registration menu does not appear if Disable Scanner is set to Auto Disabled.

Disable Scanner

Use this setting to enable or disable the flatbed scanner and ADF.

Note: Auto Disabled can only be saved by the printer in response to failed scanner operation. Users cannot save this setting.

Paper Prompts

Setting Paper Prompts controls which tray a change prompt is directed to when paper is sensed to be the wrong size.

Envelope Prompts

Env Prompts controls which tray a change prompt is directed to when the envelopes are sensed to be the wrong size.

Action for Prompts

This setting enables users to have the printer resolve media change prompt situations automatically. Such prompts occur when the selected media for the job is not available when the job prints. This setting applies only to jobs that cannot be parked.

- Prompt user (default setting)– The user must respond to the prompt and choose one of the following options each time.
- Continue– The job prints on the closest available media, and the printer preserves the requested size and type specifications (e.g., Bond or Transparency). If the available media is smaller than the requested size, the printer crops the print image as needed.
- Use Current– The job prints on the media currently available and uses the size and type specifications of the available media instead of the original job. If the media is smaller than the requested size, the printer crops the print image as needed.

Jobs On Disk

This setting appears only if a hard disk is installed. Jobs can be deleted from the hard disk. Settings are Delete and Do Not Delete (default). The Delete setting does not affect Print and Hold or parked jobs.

Disk Encryption

This setting appears only if a hard disk is installed, the disk is not read only, and Disk Encryption is enabled.

Warning: When the settings are changed, all data on the hard disk is deleted.

Erase All Information on Disk

This setting performs a wipe of the printer hard disk, erasing all data.

Warning: Wipe Disk deletes all data on the printer hard disk, including downloaded fonts, macros, and held jobs. Do not initiate a disk wipe if you have information on the printer that you want to save.

- Wipe disk (fast)– This is a single-pass wipe that overwrites all data and the file system. This wipe is faster but less secure since it is possible to retrieve the deleted data with forensic data retrieval techniques.
- Wipe disk (secure)– This multiple-pass wipe overwrites all data without rewriting the file system. This wipe is DoD 5220.22-M compliant since the deleted data is irretrievable.

Font Sharpening

Font Sharpening allows the user to adjust the value of the high frequency screens used for font data. For example, if the value is 24, all fonts 24 points and less use the high frequency screens. The default value is 24.

This feature works only in PostScript emulation.

Require Standby

If set to Off, this setting disables Standby Mode in the General Settings menu.

UI Automation

Once enabled, this setting creates an “ENABLE_UI_AUTOMATION” file in the shared directory. As long as this file exists, the printer permits external developers to test the stability of their applications against the printer to ensure that their applications have an appropriate level of stability. Disabling this setting deletes the file.

Key Repeat Initial Delay

This setting determines the length of delay before a repeating key starts repeating. The default setting is 1 second. You can adjust the setting by .25 second increments.

Key Repeat Rate

This setting indicates the number of presses per second for repeating keys. The default setting is 15 presses per second.

Clear Custom Status

This setting erases any custom messages the user has created for the Default or Alternate custom messages.

USB Speed

This setting determines the speed at which the USB port reads and writes data from flash drives. Auto is the default setting. Setting the USB Speed to Full disables the hi-speed capabilities of the port.

USB PnP

In some cases, the device's USB device port (on the back of the device) may be incompatible with the chipset in a user's PC. This setting enables the user to change the USB driver's mode in order to improve its compatibility with these PCs.

Automatically Display Error Screens

When "On," the panel automatically displays any existing printer- or scanner-related IR after the device remains inactive on the Home screen for a length of time equal to the Screen Timeout setting.

Exit Config Menu

Press **Select** to exit the Configuration menu and reboot the printer.

Diagnostics mode

To run the diagnostic tests described in this chapter, put the scanner in Diagnostics mode. Additional printer diagnostics are available in the printer Diagnostic mode accessible from the printer user interta.

Diagnostic mode menus

REGISTRATION	Use this menu to adjust printer margins. **Note:** See Scanner Manual Registration in the Configuration Menu to adjust the scanner registration settings.
Top Margin	
Bottom Margin	
Left Margin	
Right Margin	
Quick Test	
SCANNER CALIBRATION	See **“SCANNER CALIBRATION” on page 3-17**.
Copy Quick Test	
Print Testcase	
Adjust Calibration Values	
Reset Flatbed Calibration Values	
Reset ADF Front Calibration Values	
Reset ADF Back Calibration Values	
PRINT TESTS	See **“PRINT TESTS” on page 3-17**.
Tray 1	
Tray 2 (if installed)	
Tray 3 (if installed)	
Tray 4 (if installed)	
Tray 5 (if installed	
Multi-Purpose Feeder	
Print Quality Pages	See **“Print Quality Pages” on page 3-18**.

HARDWARE TESTS	
Panel Test	See **“Panel Test” on page 3-18**
Button Test	See **“Button Test” on page 3-18**
DRAM Test	See **“DRAM Test” on page 3-18**
Serial 1 Wrap (if installed)	See **“Serial Wrap Test” on page 3-19**
USB HS Test Mode	
OUTPUT BIN TESTS	
Feed Tests	
DUPLEX TESTS	
Quick Test	
Top Margin	
INPUT TRAY TESTS (if installed)	
Feed Test	
DEVICE TESTS (if installed)	
Quick Disk Test	See **“Quick Disk Test” on page 3-20**
Disk Test/Clean	See **“Disk Test/Clean” on page 3-20**
PRINTER SETUP	
Defaults	See **“Defaults” on page 3-21**
Printed Page Count	See **“PERM PAGE COUNTS” on page 3-22**
Perm Page Count	
Serial Number	See **“Serial Number” on page 3-22**
Model Name	See **“Model Name” on page 3-22**
Configuration ID	See **“Configuration ID” on page 3-22**
EP SETUP	
Fuser Temp	
Fuser page Count	
Warm Up Time	
Transfer	
Print Contrast	
Charge Roll	
Gap Adjust	
Auto Dark Adjust	
REPORTS	
EVENT LOG	
Display Log	See **“Display Log” on page 3-23**
Print Log	See **“Print Log” on page 3-23**
Clear Log	See **“Clear Log” on page 3-23**
SCANNER TESTS	
Scanner Calibration Reset	See **“Scanner Calibration Reset” on page 3-23**.
ASIC Test	See **“ASIC Test” on page 3-23**.
Feed Test	See **“Feed Test” on page 3-23**.
Sensor Test	See **“Sensor Test” on page 3-24**.
ADF Magnification	See **“ADF Magnification” on page 3-24**.
ULTRASONIC MULTIFEED SENSOR CALIBRATION	
EXIT DIAGNOSTICS	

SCANNER CALIBRATION

Adjust Calibration Values

This menu is used to manually adjust the scanner black levels to optimize printed text and images from scanned or copied originals. Use this menu to adjust the levels after you replace any of the following parts:

- Controller board
- Flatbed scanner assembly
- Front ADF scanner assembly
- Back ADF scanner assembly

For more information, see **“Calibrating the scanner” on page 3-25**.

Reset Flatbed Calibration Values

This resets the scanner black levels to factory default settings. These values must be reset after you replace any of the following parts:

- Controller board
- Flatbed scanner assembly
- Front ADF scanner assembly
- Back ADF scanner assembly

PRINT TESTS

Print Tests (input sources)

This test determines if the printer can print on media from any of the paper input sources. Each of the installed sources is available within the Print Tests menu.

The content of the test page varies depending on the media installed in the selected input source.

- If a source is selected that contains paper, then a page similar to the Quick Test Page is printed and does not contain the Print Registration diamonds.
- If a source is selected which contains envelopes, then an Envelope Print Test pattern is printed. This pattern contains only text, which consists of continuous prints of each character in the selected symbol set.
- If **Continuous** is selected, then the same page prints continuously from the selected source until you press **Stop**. If Continuous is selected from a source which contains envelopes, then the envelope print test pattern is printed on the first envelope, and the rest are blank.

The Print Test page always prints single-sided, regardless of the Duplex setting or the presence of the Duplex option.

To run the Print Test:

1. From the Diagnostics menu, touch **PRINT TESTS**.
2. Select the paper source.
3. Select either **Single** or **Continuous**.
   Note: If **Single** is selected, no buttons are active while the Print Test Page is printing. If **Continuous** is selected, **Stop** (X) can be pressed to cancel the test.
4. At the end of the test, the printer returns to the PRINT TESTS menu.

Print Quality Pages

The print quality test consists of five pages. Pages one and two contain a mixture of graphics and text. The remainder of the pages contain only graphics.

This test may be printed from either Configuration menu or the Diagnostics menu. To run the print quality pages from the Diagnostics menu, select **PRINT TESTS** and **Print Quality Pages** from the menu. Once the test is started it cannot be canceled. After the test pages print, the printer returns to the **PRINT TESTS** menu.

HARDWARE TESTS

Panel Test

This test verifies the operator panel display function.

To run the Panel Test:

1. From the Diagnostics menu, navigate to:
   HARDWARE TESTS > **Panel Test**
   The Panel test continually executes.
2. Press **Stop** (X) to cancel the test.

Button Test

This test verifies the operator panel button function.

To run the Button Test:

1. From the Diagnostics menu, navigate to:
   HARDWARE TESTS > **Button Test**
   With no buttons pressed, an image the operator panel buttons is displayed. Press each operator panel button one at a time, and the button in the illustration turns blue.
2. Press **Stop** (X) or touch **Back** to exit the test.

DRAM Test

This test checks the validity of DRAM, both standard and optional. The test repeatedly writes patterns of data to DRAM to verify that each bit in memory can be set and read correctly.

To run the DRAM Test:

1. From the Diagnostics menu, navigate to:
   HARDWARE TESTS > **DRAM Test**

`DRAM Test Testing`… appears on the screen, followed by `Resetting the Printer`.

After the printer resets, the results of the test appear: `DRAM Test (x)MB P:###### F:######`.

(x) represents the size of the installed DRAM.

P:###### represents the number of times the memory test has passed and finished successfully, with the maximum pass count being 999,999.

F:##### represents the number of times the memory test has failed and finished with errors, with the maximum fail count being 999,999.

Once the maximum pass count or fail count is reached, or once all the DRAM has been tested, the test stops and the final results appear.

Serial Wrap Test

Use this test to check the operation of the Serial Port Hardware using a wrap plug. Each signal is tested.

Note: this test is listed only if the serial option ISP card is installed.

To run the Serial Wrap Test:

1. Disconnect the serial interface cable, and install the wrap plug.
2. From the Diagnostics menu, navigate to:
   HARDWARE TESTS > **Serial Wrap Test**
3. Select the appropriate **Serial Wrap Test** from the list. Values may include **Serial Wrap**, **Serial 1 Wrap**, **Serial 2 Wrap,** or **Serial 3 Wrap**. Each time the test finishes, the screen updates with the result. P and F represent the same numbers for DRAM. If the test passes, the Pass Count increases by 1. However, if the test fails, one of the following failure messages appears for approximately three seconds, and the Fail Count increases by 1:
   Receive Status Interrupt Error
   Status Error
   Receive Data Interrupt Error
   Transmit Data Interrupt Error
   Transmit Empty Error
   Threshold Error
   Receive Data Ready Error
   Break Interrupt Error
   Framing Error
   Parity Error
   Overrun Error
   Data Error
   Data 232 Error
   Data 422 Error
   FIFO Error
   DSR Error
   DSR PIO Error
   DSR Interrupt Error
   CTS Error
   CTS PIO Error
   CTS Interrupt Error

Once the maximum count is reached or a failure occurs, the test stops.

Press **Stop** (X) to cancel the test.

USB HS Test Mode

1. From the Diagnostics menu, navigate to:
   HARDWARE TESTS > **USB HS Test Mode**
2. Select the desired Port. The test begins immediately for the Single Stop tests.
3. Select the desired Test.

Ports	Tests
Port 0	Test J
Port 1	Test K
Port 2	Test SEO NAK
Port 3	Test Packet
Single Stop Get Device Description	Test Force Enable
Single Stop Set Feature	

4. To cancel the test, turn the printer off.

DEVICE TESTS

Note: Disks or flash devices must be installed in order to perform these tests.

Quick Disk Test

This test performs a non-destructive read/write on one block per track on the disk. The test reads one block on each track, saves the data, and proceeds to write and read four test patterns to the bytes in the block. If the block is good, the saved data is written back to the disk.

1. From the Diagnostics menu, navigate to:
   DEVICE TESTS > **Quick Disk Test**
   - The power indicator *blinks* while the test is in progress.
   - `Quick Disk Test/Test Passed` appears if the test passes.
   - `Quick Disk Test/Test Failed` appears if the test fails.
2. Press **Stop** (X) or touch **Back** to return to the Device Tests menu.

Disk Test/Clean

Warning: This test destroys all data on the disk and should not be attempted on a good disk. This test may run approximately 1½ hours depending on the disk size.

1. From the Diagnostics menu, navigate to:
   DEVICE TESTS > **Disk Test/Clean**
   A `Contents will be lost` warning appears.
2. To exit the test immediately and return to DEVICE TESTS, select **No** and touch **Submit**. To continue with the test, select **Yes** and touch **Submit**.
   When the test starts, a progress bar appears. The test cannot be stopped or canceled once it has begun.
3. Once the test is complete, the power indicator turns on solid and a message appears indicating whether the test passed or failed. Press **Stop** (X) to return to DEVICE TESTS.

Input Tray Tests

This test determines if the printer can feed media from any of the paper input sources. Each of the installed sources is available within the Input Tray Tests menu.

To run the Input Tray Test:

1. From the Diagnostics menu, touch **INPUT TRAY TESTS**.
2. Select the input source.
3. Select either **Single** or **Continuous**.
   Note: If **Single** is selected, no buttons are active while the input device is feeding. If **Continuous** is selected, **Stop** (X) can be pressed to cancel the test.
4. At the end of the test, the printer returns to the INPUT TRAY TESTS menu.

PRINTER SETUP

Defaults

This setting is used by the printer to determine whether US or non-US factory defaults should be selected. The following printer settings have different US and non-US values:

Printer default values	US value	Non-US value
Paper Sizes setting in the General Settings menu	U.S.	Metric
Default Paper Size (paper feeding sources which do not have hardware size sensing capabilities)	Letter	A4
Default Envelope Size (envelope feeding sources which do not have hardware size sensing capability)	10 Envelope	DL Envelope
Fax media size	Letter	A4
PCL Symbol Set	PC-8	PC-850
PPDS Code Page	437	850
Universal Units of Measure	Inches	Millimeters

Modification of the printer setting Defaults causes the NVRAM space to be restored to the printer's factory settings.

PERM PAGE COUNTS

This menu lets you view the total page counts of the printer or the page counts broken down into color and mono pages printed. Unlike in previous printers, none of these values can be changed.

Touch **Back** to return to the Diagnostics menu.

Serial Number

You can view the serial number.

Engine Setting *(1-16)*

Warning: The engine setting should not be changed without specific instructions from the next level of support.

Model Name

You can view the model name.

Configuration ID

The two configuration IDs are used to communicate information about certain areas of the printer that cannot be determined using hardware sensors. The configuration IDs are originally set at the factory when the printer is manufactured. However, you may need to reset Configuration ID 1 or Configuration ID 2 whenever you replace the system board. The IDs consist of eight hexadecimal characters, including 0 through 9 and A through F.

Note: When the printer detects a Configuration ID that is not defined or invalid, the following occurs:

- The default standard model Configuration ID is used instead.
- Configuration ID is the only function available in DIAGNOSTICS.
- Unless the menu is in DIAGNOSTICS, `Check Config ID` appears.

To set the configuration ID:

1. From the Diagnostics menu, navigate to:
   Printer Setup > **Configuration ID**
2. Enter the Configuration ID 1.
3. Touch the Configuration ID 2 value to select it, and then enter the new Configuration ID 2.
4. Touch **Submit** to save and validate the new IDs.
   If either ID is invalid, then the printer discards the changes and returns to the original IDs.
   If both IDs are valid, then the printer returns to the Diagnostics menu.

REPORTS

From this menu you can print the Menu Settings Page or the Event Log.

EVENT LOG

Display Log

Display Log shows the message that appeared on the operator panel for each event in the log, starting with the most recent. Use the touch-screen arrows to scroll through the log entries. To see more in-depth information about each event, print the event log using the Print Log menu item.

Touch **Back** to return to the EVENT LOG menu.

Print Log

The Print Log menu item prints a detailed report of each event in the log. The first page of the event log contains a Printer Information section similar to what is printed on a Menu Setting Page. Printed at the top of each page is the model name and serial number to assist in tracking each page of a report to a specific printer. The printout of the log contains the following information for each error in the log:

- Page count when the error occurred (except for 900 service controller board software errors).
- Code versions of all packages when error occurred.
- Panel message when error occurred (except for 900 service controller board software errors).
- Debug information and secondary error codes, depending on the error.

The Clear Log operation clears out the errors that print in this report. The errors listed in the Display Log operation do not necessarily match in number nor in order with the errors from the printer log.

Note: This log can be printed from configuration menu, but the debug and secondary error codes are not printed on this log.

Clear Log

This menu item deletes the event log. Once the event log is deleted, the only item remaining on the log is the “Clear Log” event.

Touch **Back** to return to the EVENT LOG menu.

SCANNER TESTS

Scanner Calibration Reset

This option resets the scanner calibration values to factory default settings. This should be done after you replace the flatbed scanner unit.

Note: Be sure the scanner glass and backing material are clean before performing this test.

ASIC Test

This test initiates a scan of the scanner ASIC memory. This is a pass/fail test.

Press **Stop** (X) to clear the results message from the screen.

Feed Test

This test performs a continuous feed test of either the flatbed scanner or ADF without producing any printed output or incrementing any of the scanner-related counters.

For an ADF test, select a paper size. The ADF then performs a duplex scan using the chosen paper size settings. For a flatbed test, the scanner traverses the entire length of the flatbed.

Press **Stop** (X) to end the test.

Sensor Test

This test checks each scanner-related sensor and returns “Closed” or “Open” for each.

Sensor (ADF Paper Present)– ”0” means paper is not present in the ADF.
Sensor (FB Cover Open)– ”0” means the flatbed cover is down.
Sensor (Home Sensor)– ”1” means the CCD is in the home position.
Sensor (Skew Sensor)– ”0” means the actuator is in the up position.
Sensor (ADF Cover open)– ”0” means the ADF cover is closed.
Sensor (ADF Exit)– ”0” means paper is not present in exit sensor.
Sensor (ADF Scan Sensor)– ”0” means paper is not present in the scan sensor.
Sensor (ADF Jam Sensor)– ”0” means paper is not present in the jam sensor.
Sensor (FB short)– ”0” means sensor open.
Sensor (FB medium)– ”0” means sensor open.
Sensor (FB long)– ”0” means sensor open.
Sensor (ADF long)– ”0” means sensor open.
Sensor (ADF width 1)– ”0” means sensor open.
Sensor (ADF width 2)– ”0” means sensor open.

ADF Magnification

Use this menu to adjust the ADF magnification from -99 to 100. The default setting is 0.

EXIT DIAGNOSTICS

Select **EXIT DIAGNOSTICS** to exit the Diagnostics menu and return to normal mode.

Adjustments

Calibrating the scanner

After replacing any of the following components, you must reset the relevant scanner calibration values and check the black levels of the scanner:

- Flatbed scanner module assembly
- Front ADF scanner module assembly
- Back ADF scanner module assembly
- Controller board

Resetting the calibration values

Note: If the scanner menus do not match the following instructions, then contact your next level of support.

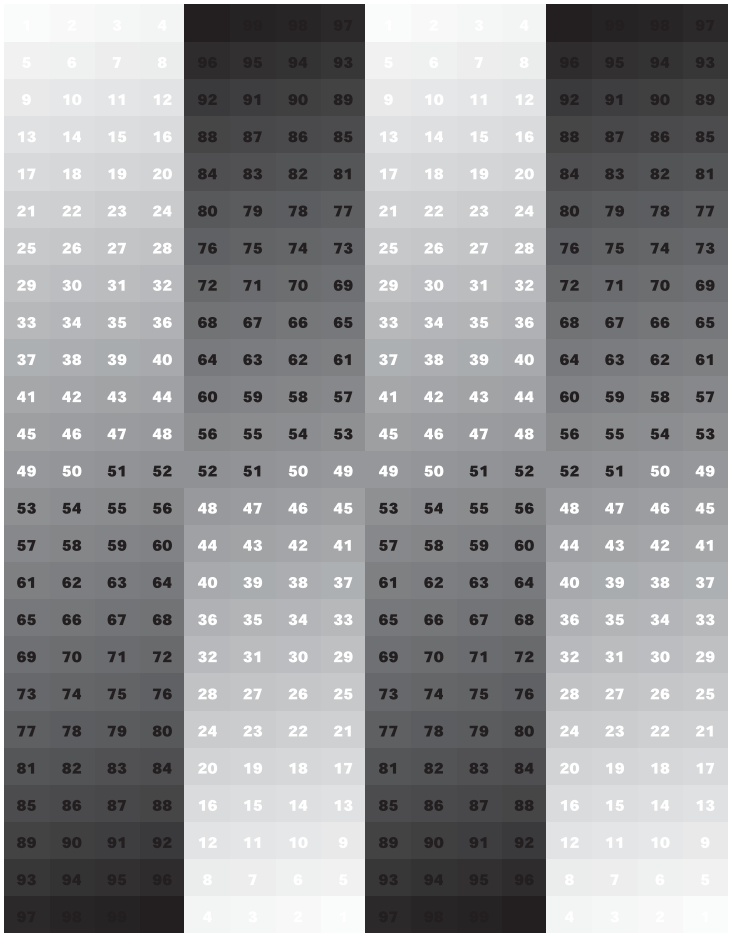
1. Enter the Diagnostic mode: press and hold **3** and **6**, turn on the printer, and release the buttons when the splash screen appears.
2. From the Diagnostics menu, navigate to:
   Scanner Calibration > **Reset (relevant assembly) Calibration Values**

Adjusting the scanner black and white levels

Note:

- If the scanner menus do not match the following instructions, then contact your next level of support.
- For best results, use media with a minimum weight of 24lb and minimum brightness of 92 for the following procedures.

1. From the Diagnostic menu, navigate to:
   Scanner Calibration > **Print Testcase**
   A single, simplex test page will print with grey scale samples from 1 to 100, with 1 representing pure white and 100 representing pure black. A sample of the page is shown below:



2. Adjust the ADF Front:

White Level:

a. Load the printed test page facedown into the ADF.
b. From the Diagnostics menu, navigate to: **Scanner Calibration > Copy Quick Test.**
c. Inspect the white level calibration by comparing the copy to the original test page. Ensure that the lightest visible shaded squares of the original have similar lightness to the same lightest visible shaded squares in the copy. If the original and copy pages match, the white level calibration is correct and needs no adjustment. Otherwise, navigate to: **Adjust Calibration Values > ADF Front White.**

Note: A small amount of background is normal and acceptable in the copy. Disregard the background when comparing the lightness level between the original and the copy.

d. Adjust the values, and then touch **Submit** to save your changes. Increasing the value makes the white level darker.
e. To check the changes, reload the original test page, and then repeat the Copy Quick Test. Repeat the steps as needed until you are satisfied with the ADF front white level.

Black Level:

a. Load the printed test page facedown into the ADF.
b. From the Diagnostics menu, navigate to: **Scanner Calibration > Copy Quick Test.**
c. Inspect the black level calibration by assessing the toner saturation of the darkest square of the copy**.** The objective of the black level calibration is to find the minimum numeric setting that provides the maximum toner saturation of the darkest square. Too high of a setting will cause other dark squares to become fully black. Too low of a setting will result in the darkest square not being as dark as possible.
d. Navigate to: **Adjust Calibration Values > ADF Front Black**. If the darkest square of the copy page does not appear fully saturated, then increase the value. If several of the darkest squares look equally saturated, then decrease the value. Select **Submit** to save your changes, reload the original test page, and repeat the Copy Quick Test. Inspect the copy page again and repeat this step until the single darkest square is fully saturated, and none of the other dark squares are as dark as the darkest square.

3. Adjust the ADF Back:

White Level:

a. Load the printed test page faceup into the ADF.
b. From the Diagnostics menu, navigate to: **Scanner Calibration > Copy Quick Test.**
c. Inspect the white level calibration by comparing the copy to the original test page. Ensure that the lightest visible shaded squares of the original have similar lightness to the same lightest visible shaded squares in the copy. If the original and copy pages match, then the white level calibration is correct and needs no adjustment. Otherwise, navigate to: **Adjust Calibration Values > ADF Back White.**

Note: A small amount of background is normal and acceptable in the copy. Disregard the background when comparing the lightness level between the original and the copy.

d. Adjust the values, and then touch Submit to save your changes. Increasing the value makes the white level darker.
e. To check the changes, reload the original test page, and then repeat the Copy Quick Test. Repeat the steps as needed until you are satisfied with the ADF back white level.

Black Level:

a. Load the printed test page faceup into the ADF.
b. From the Diagnostics menu, navigate to: **Scanner Calibration > Copy Quick Test.**
c. Inspect the black level calibration by assessing the toner saturation of the darkest square of the copy**.** The objective of the black level calibration is to find the minimum numeric setting that provides the maximum toner saturation of the darkest square. Too high of a setting will cause other dark squares to become fully black. Too low of a setting will result in the darkest square not being as dark as possible.

d. Navigate to: **Adjust Calibration Values > ADF Back Black.** If the darkest square of the copy page does not appear fully saturated, then increase the value. If several of the darkest squares look equally saturated, then decrease the value. Select **Submit** to save your changes, reload the original test page, and repeat the Copy Quick Test. Inspect the copy page again and repeat this step until the single darkest square is fully saturated, and none of the other dark squares are as dark as the darkest square.

4. Adjust the Flatbed:

White Level:

a. Remove all pages from the ADF, then load the printed test page facedown onto the flatbed.

b. From the Diagnostics menu, navigate to: **Scanner Calibration > Copy Quick Test.**

c. Inspect the white level calibration by comparing the copy to the original test page. Ensure that the lightest visible shaded squares of the original have similar lightness to the same lightest visible shaded squares in the copy. If the original and copy pages match, the white level calibration is correct and needs no adjustment. Otherwise, navigate to: **Adjust Calibration Values > Flatbed White.**

Note: A small amount of background is normal and acceptable in the copy. Disregard the background when comparing the lightness level between the original and the copy.

d. Adjust the values, and then touch Submit to save your changes. Increasing the value makes the white level darker.

e. To check the changes, reload the original test page, and then repeat the Copy Quick Test. Repeat the steps as needed until you are satisfied with the flatbed white level.

Black Level:

a. Remove all pages from the ADF, then load the printed test page facedown onto the flatbed.

b. From the Diagnostics menu, navigate to: **Scanner Calibration > Copy Quick Test.**

c. Inspect the black level calibration by assessing the toner saturation of the darkest square of the copy**.** The objective of the black level calibration is to find the minimum numeric setting that provides the maximum toner saturation of the darkest square. Too high of a setting will cause other dark squares to become fully black. Too low of a setting will result in the darkest square not being as dark as possible.

d. Navigate to: **Adjust Calibration Values > Flatbed Black.** If the darkest square of the copy page does not appear fully saturated, then increase the value. If several of the darkest squares look equally saturated, then decrease the value. Select **Submit** to save your changes, reload the original test page, and repeat the Copy Quick Test. Inspect the copy page again and repeat this step until the single darkest square is fully saturated, and none of the other dark squares are as dark as the darkest square.

Calibrating the multifeed sensor

In order for the multifeed sensor to fenction properly and to detect the presence of multifeed media, the sensor must be properly calibrated. Any time a new multifeed sensor is replaced, this procedure must be followed:

1. Open the ADF, and remove the separator pad. Close the ADF.
2. Obtain a multifeed sensor calibration sheet (included with the multifeed sensor FRU), and fold it in half such that the short edges overlap each other.
3. Load the multifeed sensor calibration sheet into the ADF with the folded edge first.
4. Enter the Diagnotic Mode and select **Scanner Tests > Ultrasonic Multifeed Sensor Calibration**.
5. Press the Submit button to begin the calibration procedure. The calibration sheet will be fed into the ADF.

The test will report if the calibration procedure passed or failed. If the test reports “Passed,” then the calibration process is successfully complete. If the test reports “Failed,” then the calibration process failed to complete. If the calibration test fails, then check the following:

- Make sure the separator pad is removed.
- Make sure the calibration page is folded over and feeding into the ADF as two sheets.
- If the problem continues, then make sure the multifeed sensor is properly installed and the cables are connected. if the problem continues, then replace the multifeed sensor. See **“Multifeed sensor removal” on page 4-39**.

4. Repair information

Warning: Read the following before handling electronic parts.

Handling ESD-sensitive parts

Many electronic products use parts that are known to be sensitive to electrostatic discharge (ESD). To prevent damage to ESD-sensitive parts, use the following instructions in addition to all the usual precautions, such as turning off power before removing logic boards:

- Keep the ESD-sensitive part in its original shipping container (a special “ESD bag”) until you are ready to install the part into the machine.
- Make the least-possible movements with your body to prevent an increase of static electricity from clothing fibers, carpets, and furniture.
- Put the ESD wrist strap on your wrist. Connect the wrist band to the system ground point. This discharges any static electricity in your body to the machine.
- Hold the ESD-sensitive part by its edge connector shroud (cover); do not touch its pins. If you are removing a pluggable module, use the correct tool.
- Do not place the ESD-sensitive part on the machine cover or on a metal table; if you need to put down the ESD-sensitive part for any reason, first put it into its special bag.
- Machine covers and metal tables are electrical grounds. They increase the risk of damage because they make a discharge path from your body through the ESD-sensitive part. (Large metal objects can be discharge paths without being grounded.)
- Prevent ESD-sensitive parts from being accidentally touched by other personnel. Install machine covers when you are not working on the machine, and do not put unprotected ESD-sensitive parts on a table.
- If possible, keep all ESD-sensitive parts in a grounded metal cabinet (case).
- Be extra careful in working with ESD-sensitive parts when cold-weather heating is used because low humidity increases static electricity.

Service guidelines

CAUTION

Before disassembling the scanner, make sure the power supply cord is disconnected from the power outlet. Do not remove or install the connectors on the scanner with the power supply turned ON.

- Use caution not to drop small parts or screws inside the unit when disassembling and reassembling.
- Do not pull the connector cable when disconnecting it. Hold the connector.
- When carrying the scanning head unit, put it in an anti-static bag.
- Keep the document glass platen surface clean with a dry, clean, lint-free cloth.

Removal procedures

	CAUTION Unplug the equipment power cord from the electrical outlet before you connect or disconnect any cable or electronic board or assembly for personal safety and to prevent damage to the scanner. Disconnect any connections between the equipment and PCs/peripherals.

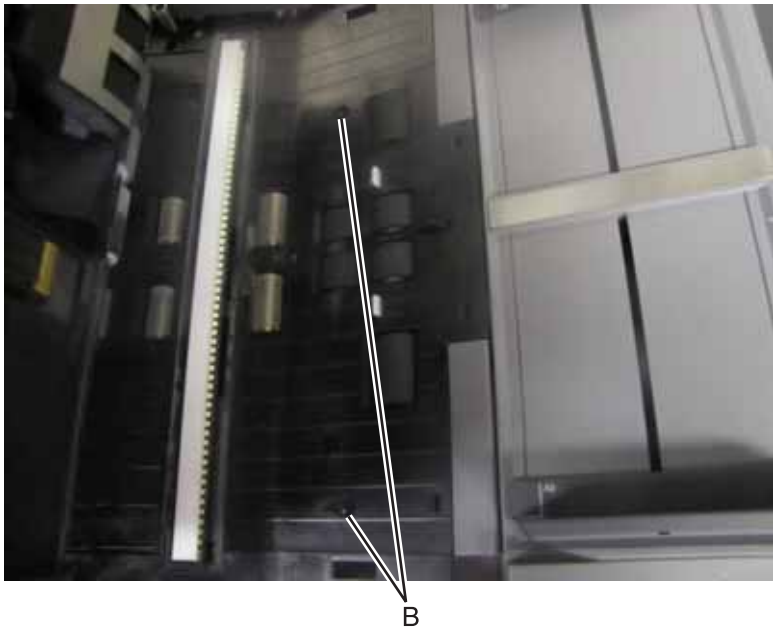
Note: Some removal procedures require removing cable ties. You must replace cable ties during reassembly to avoid pinching wires, obstructing the paper path, or restricting mechanical movement.

Removals

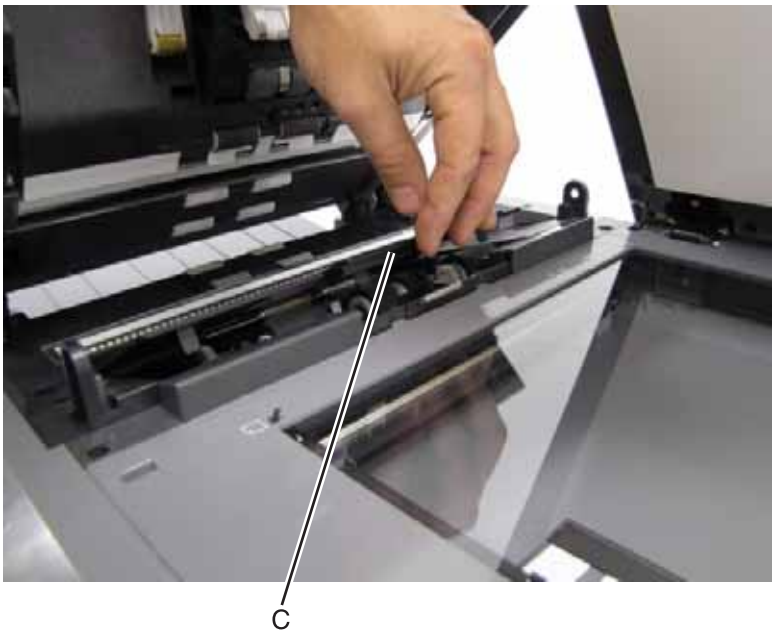
Pick roller removal

1. Pull up on the handle (A) to open the ADF.

2. Remove the two screws (B).



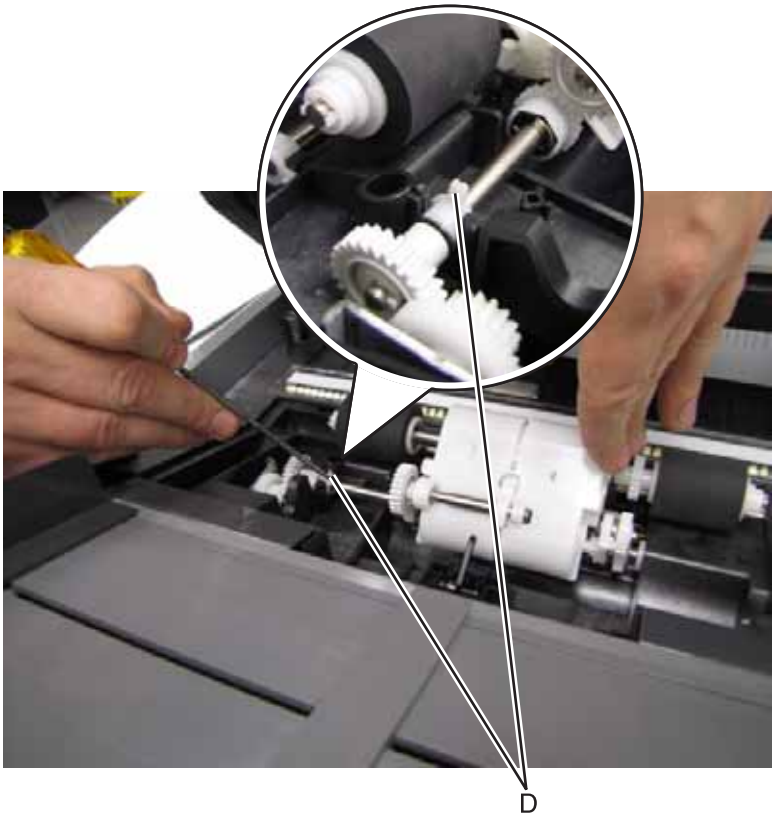
3. Open the flatbed document cover to access the pick roller access cover (C).



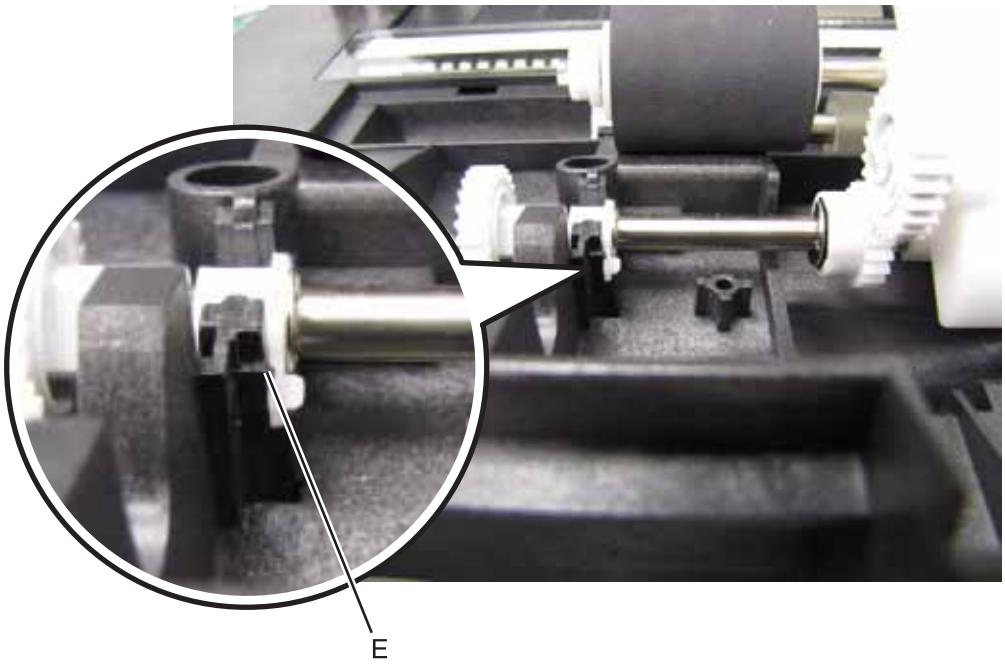
4. Lift the pick roller access cover, and close the flatbed document cover.

5. Remove the pick roller access cover, and rotate the pick roller back.

6. Unlatch the front pick roller bearing by rotating the arm (D) of the bearing straight up using a flathead screw driver.



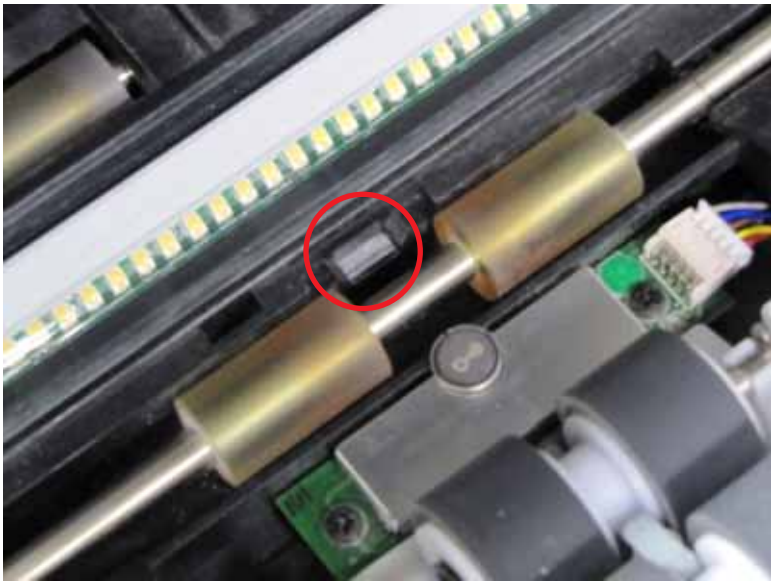
Note: Be careful to not break the black post (E) when unlatching the front pick roller bearing.



7. Gently lift the front of the pick roller from the printer.

8. Remove the pick roller.

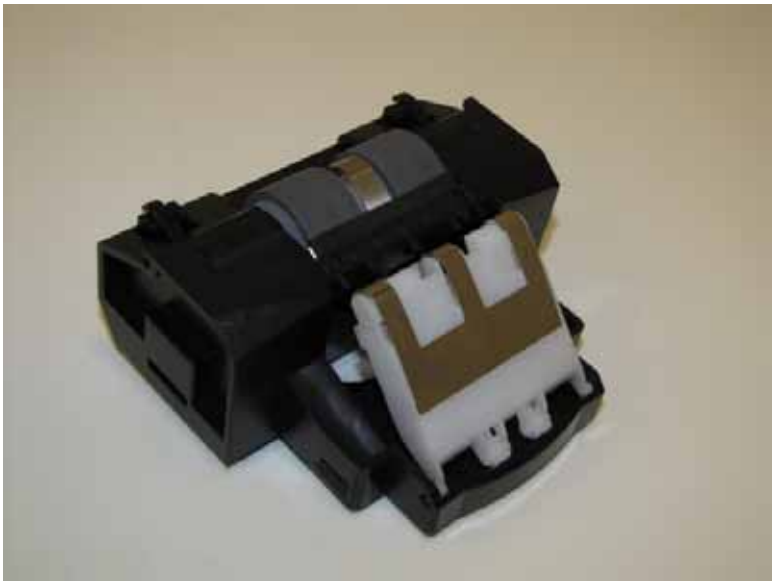
Note: Be sure to clean the media sensor and mirror of dust to prevent erroneous paper jam messages.



Separator pad removal

1. Open the ADF, and pull down on the separator pad.

2. Remove the separator pad.



Front operator panel cover

1. Loosen the operator panel cover from the front of the scanner using a flathead screwdriver.

2. Disconnect the front operator panel cover from the right side, and then disconnect the left side.

3. Remove the front operator panel cover.

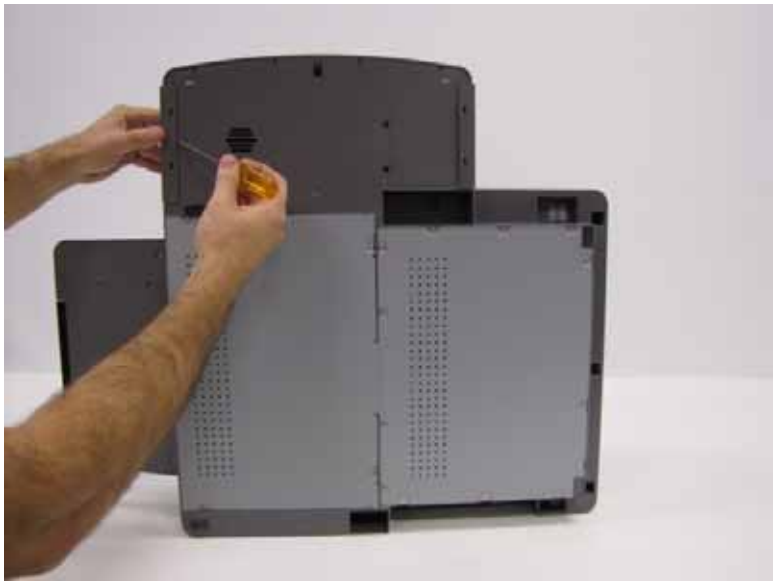
Left side operator panel cover removal

Note: To prevent damage, lock the flatbed scanner module while performing this repair.

1. Remove the front operator panel cover. See **“Front operator panel cover” on page 4-9**.
2. Stand the scanner up on its rear.

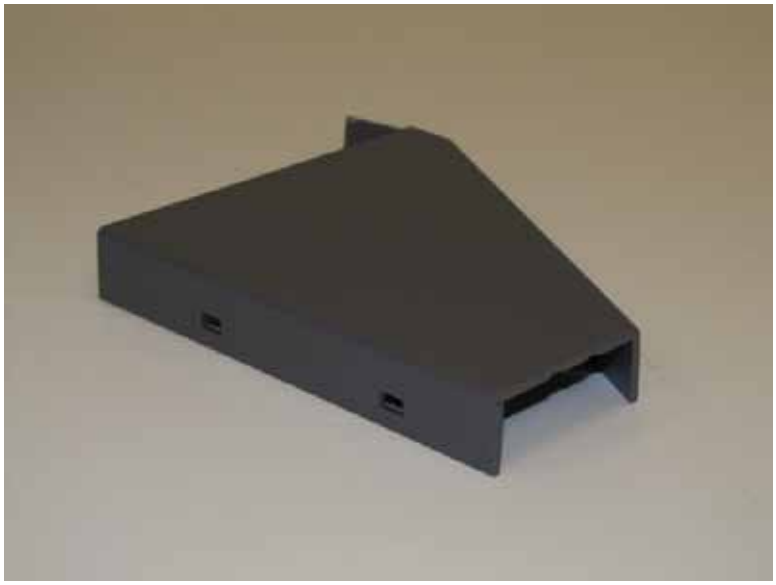
Note: Make sure that the flatbed document cover is secure when standing the scanner up on its rear.

3. Pry the cover from the left side of the scanner by using a flathead screwdriver.



4. Slide the left side operator panel cover up and away from the scanner.

5. Remove the left side operator panel cover.



Right side operator panel cover removal

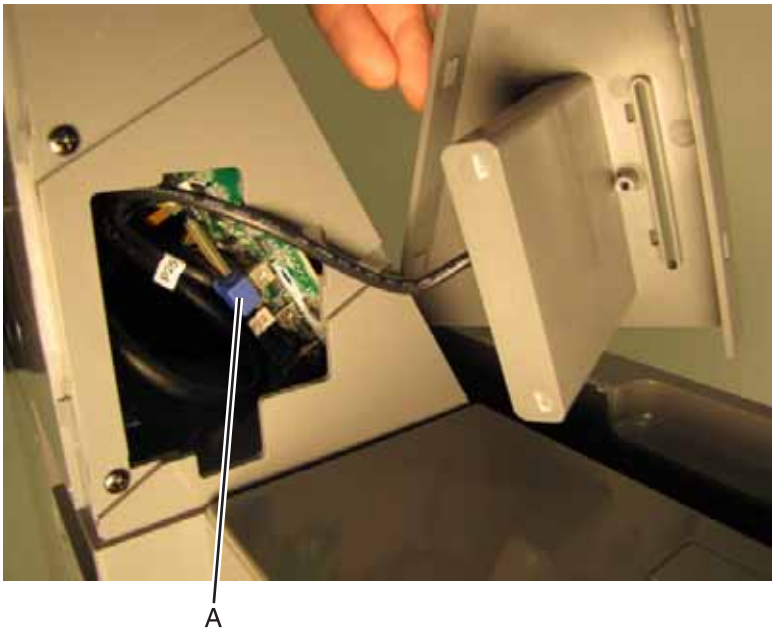
Note: To prevent damage, lock the flatbed scanner module while performing this repair.

1. Remove the front operator panel cover. See **“Front operator panel cover” on page 4-9**.
2. Stand the scanner up on its rear.

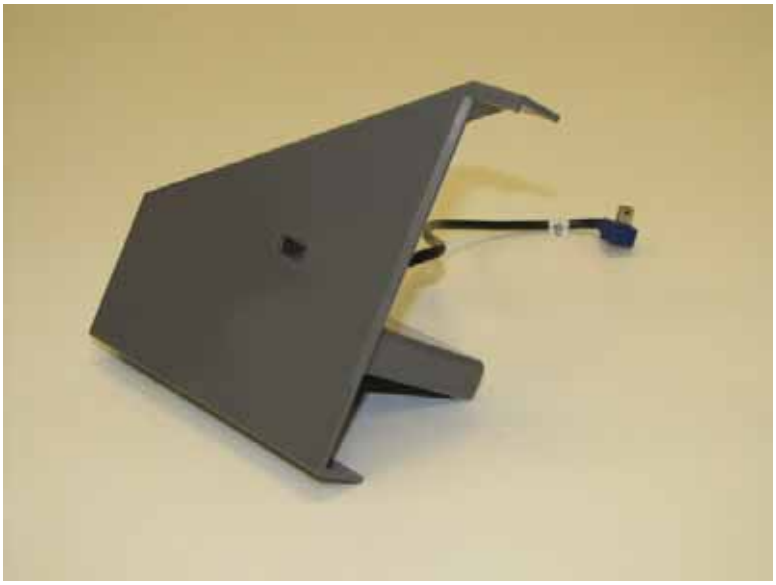
Note: Make sure that the flatbed document cover is secure when standing the scanner up on its rear.

3. Pry the cover from the right side of the scanner by using a flathead screwdriver.

4. Disconnect the USB thumb drive cable (A) from the inside of the scanner.



5. Remove the right side operator panel cover.



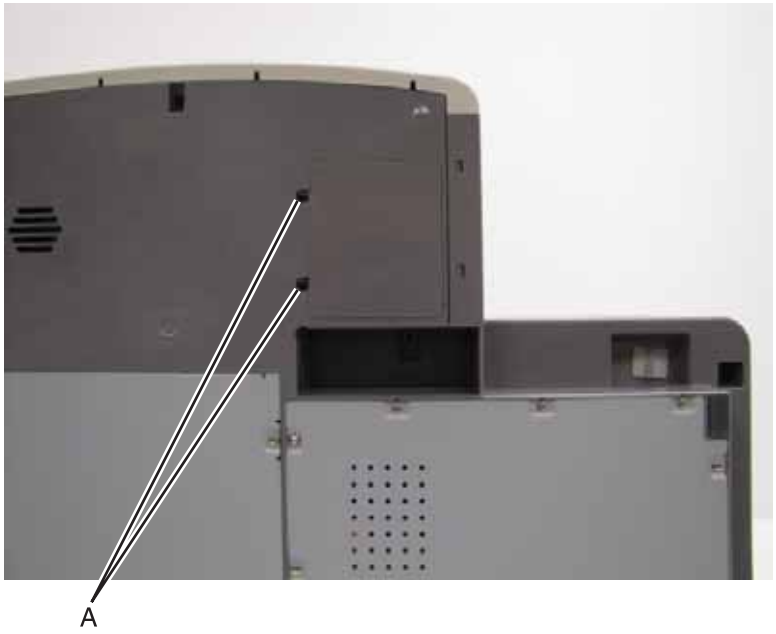
User interface controller card (UICC) access cover removal

Note: To prevent damage, lock the flatbed scanner module while performing this repair.

1. Stand the scanner up on its rear.

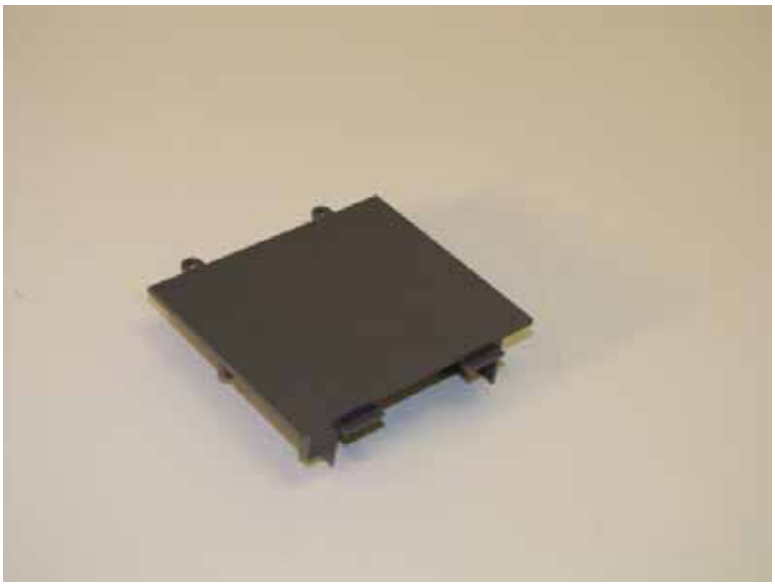
Note: Make sure that the flatbed document cover is secure when standing the scanner up on its rear.

2. Remove the two screws (A).



3. Lift the user interface controller card (UICC) access cover away from the bottom of the scanner.

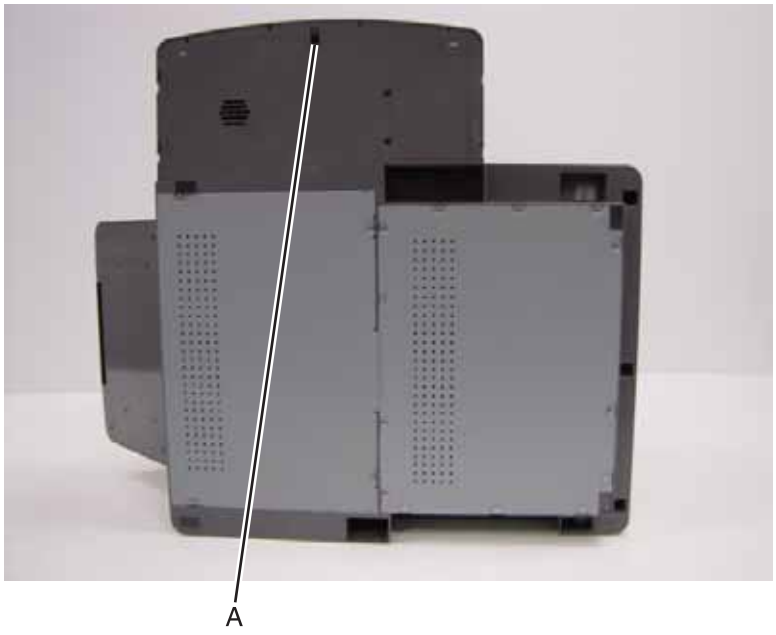
4. Remove the user interface controller card (UICC) access cover.



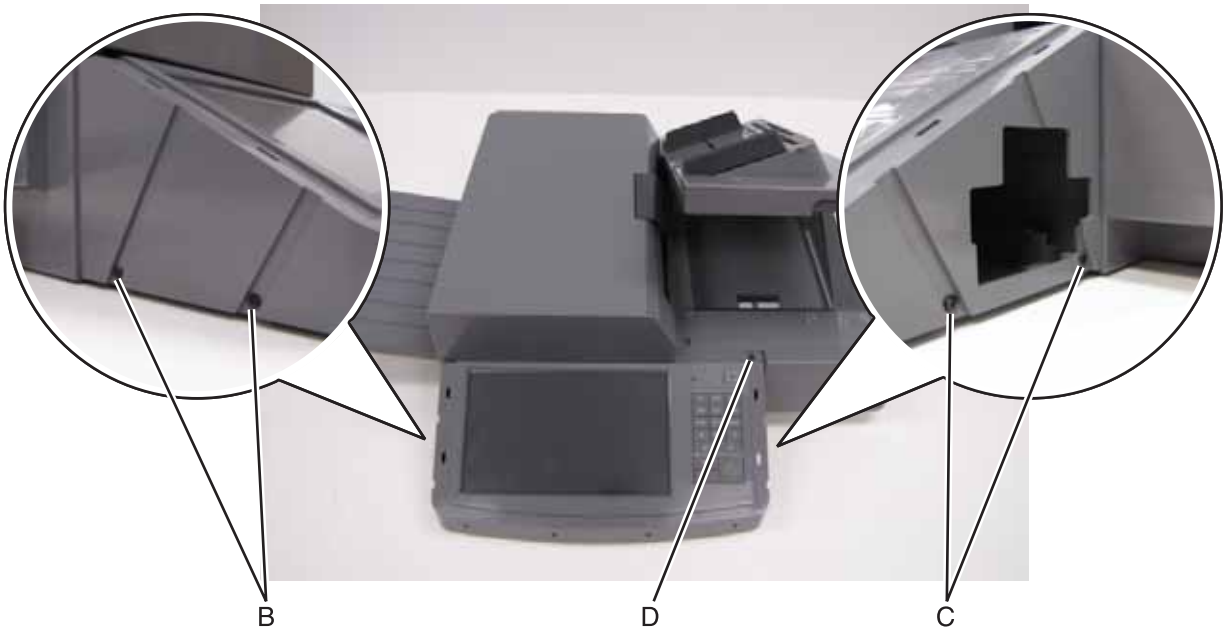
Operator panel assembly removal

Note: To prevent damage, lock the flatbed scanner module while performing this repair.

1. Remove the front operator panel cover. See **"Front operator panel cover" on page 4-9**.
2. Remove the left side operator panel cover. See **"Left side operator panel cover removal" on page 4-11**.
3. Remove the right side operator panel cover. See **"Right side operator panel cover removal" on page 4-13**.
4. Remove the one screw (A) from the bottom of the scanner.



5. Remove the two screws (B) from the left side of the scanner and the two screws (C) from the right side of the scanner.
6. Set the scanner back down and remove the one screw (D) from the top of the scanner.



7. Open the ADF cover, and disconnect the operator panel from the front of the scanner.

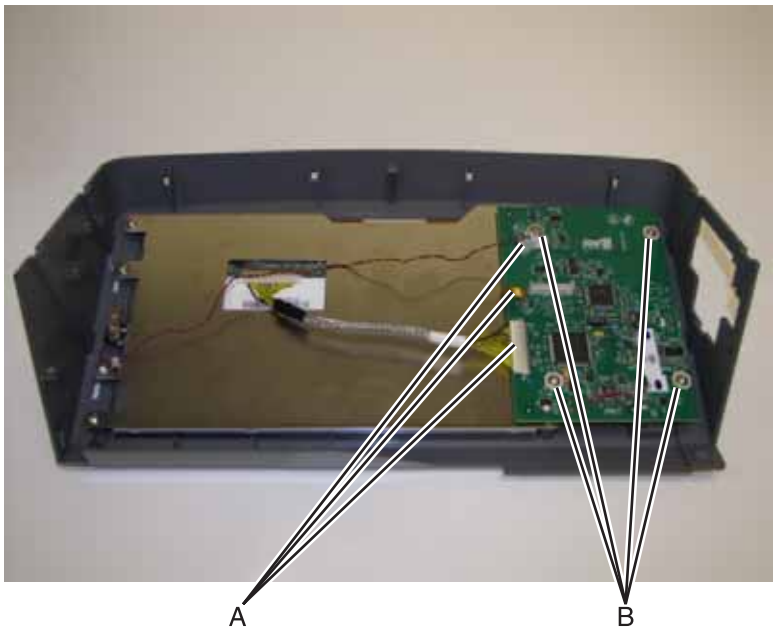
8. Disconnect the three cables (E) from the UICC card.

9. Remove the operator panel.

UICC card removal

Note: To prevent damage, lock the flatbed scanner module while performing this repair.

1. Remove the operator panel assembly. See **"Operator panel assembly removal" on page 4-17**.
2. Disconnect the three cables (A), and remove the four screws (B).



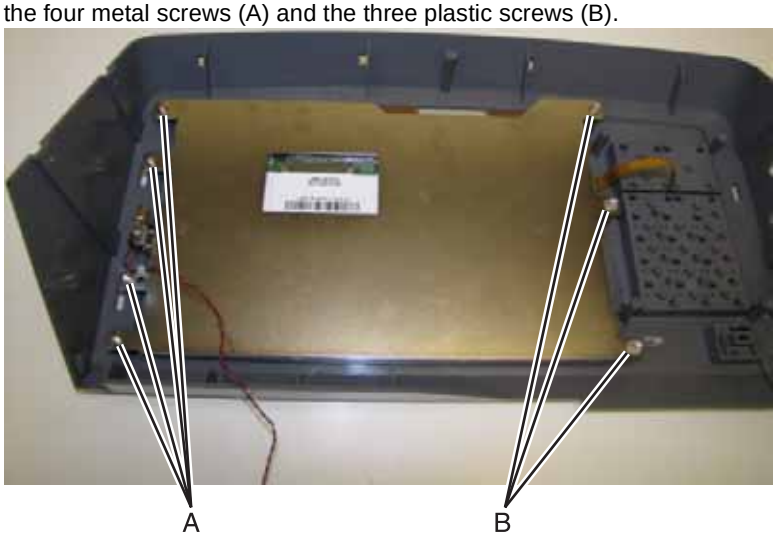
3. Remove the UICC card.

Touch screen removal

Note: To prevent damage, lock the flatbed scanner module while performing this repair.

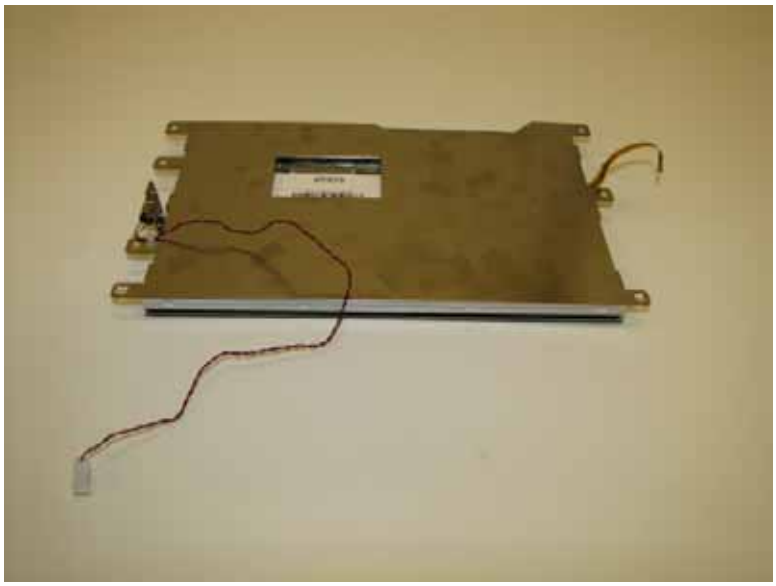
1. Remove the UICC card. See **"UICC card removal" on page 4-19**.
2. Remove the yellow cable.

3. Remove the four metal screws (A) and the three plastic screws (B).



Note: Be sure to place the three plastic screws back into their correct locations when reinstalling the touch screen.

4. Remove the touch screen.



Note: When reattaching the UICC cable to the display and to the UICC card, ensure that the end of the cable with the black tape is connected to the display.

Main operator panel cover with key buttons removal

Note: To prevent damage, lock the flatbed scanner module while performing this repair.

1. Remove the touch screen. See **“Touch screen removal” on page 4-20**.

The main operator panel cover with key buttons remains.

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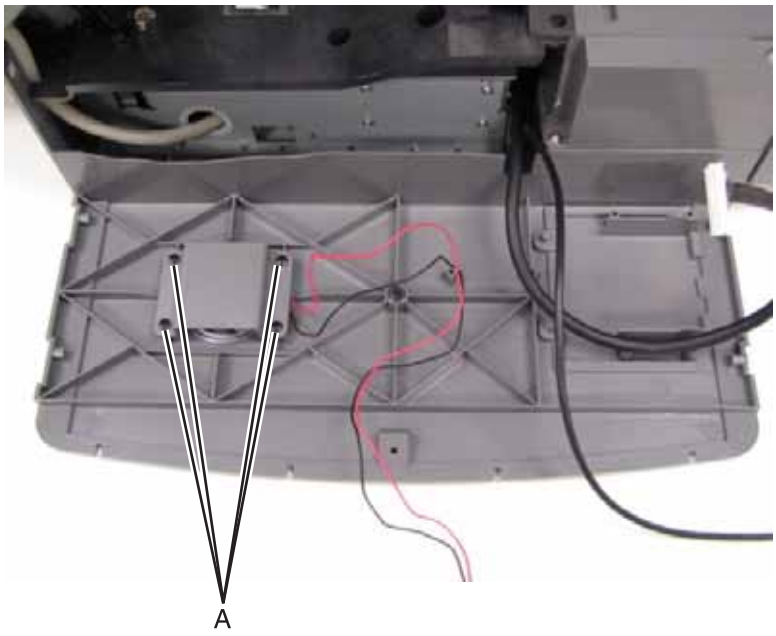
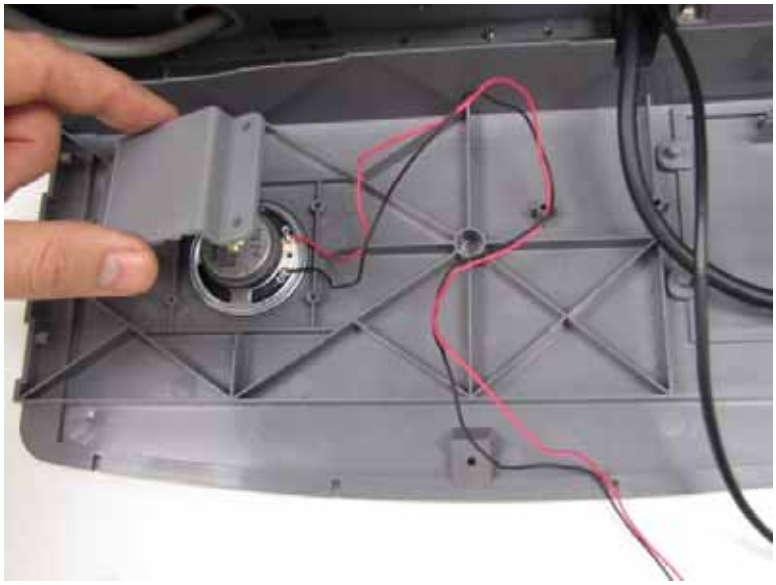
Operator panel speaker removal

Note: To prevent damage, lock the flatbed scanner module while performing this repair.

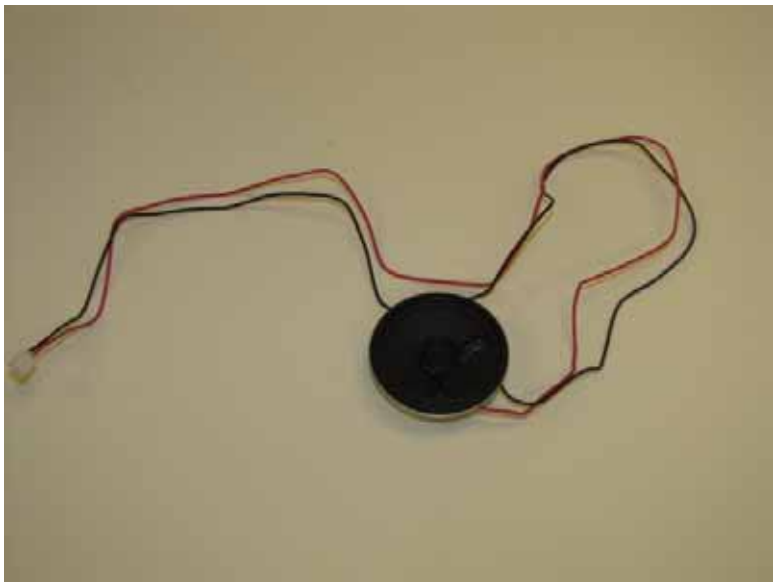
1. Remove the operator panel assembly. See **"Operator panel assembly removal" on page 4-17**.
2. Remove the four screws (A) from the speaker cover.



3. Lift the speaker cover away from the speaker.



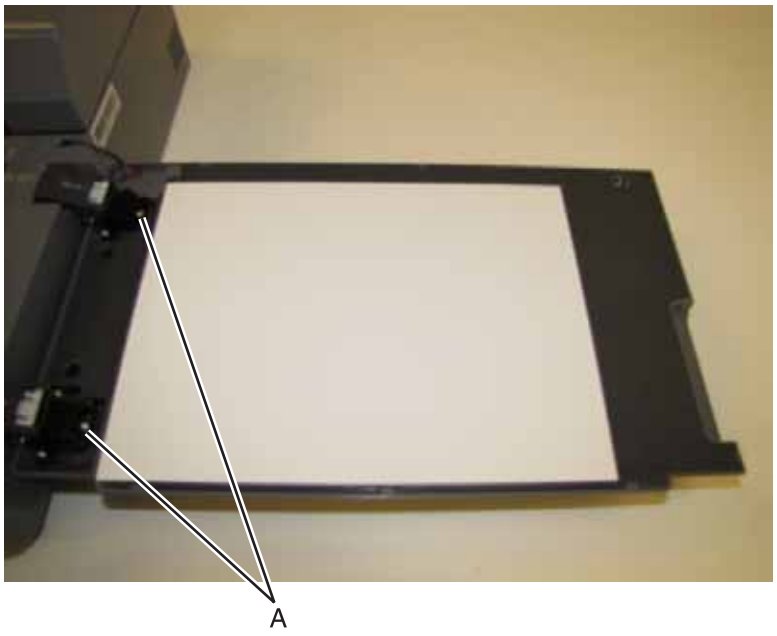
4. Remove the operator panel speaker.



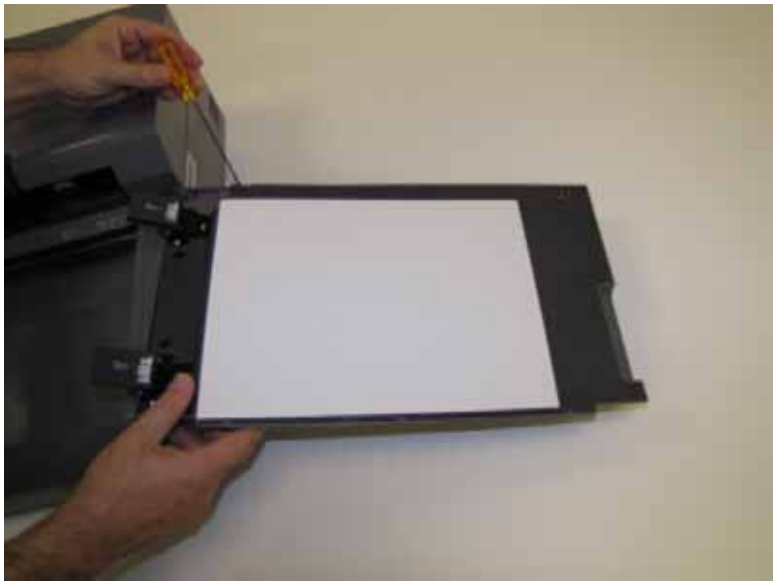
Flatbed document cover cushion removal

1. Lift the flatbed document cover out from the flatbed base.

2. Remove the two screws (A).



3. Using a flathead screw driver, pry the edges of the document cover to disconnect it from the flatbed cover.

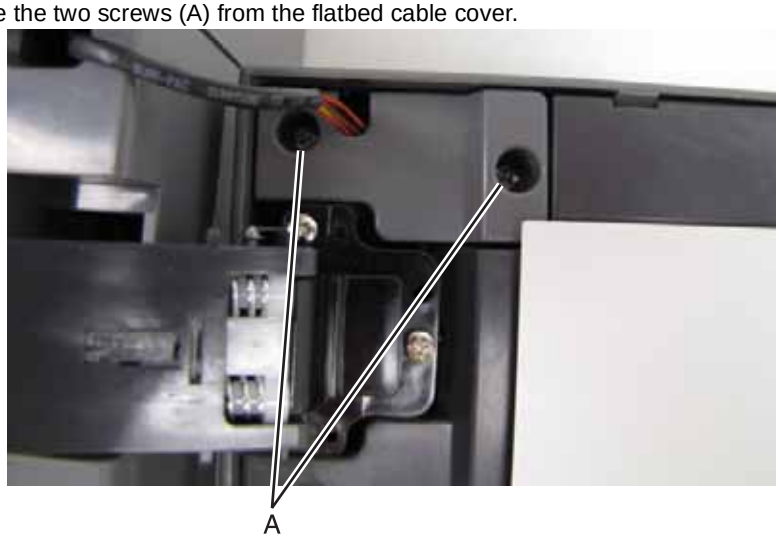


4. Remove the flatbed document cushion.

Complete flatbed document cover removal

1. Lift the flatbed document cover out from the flatbed base.

2. Remove the two screws (A) from the flatbed cable cover.



3. Remove the flatbed cable cover.

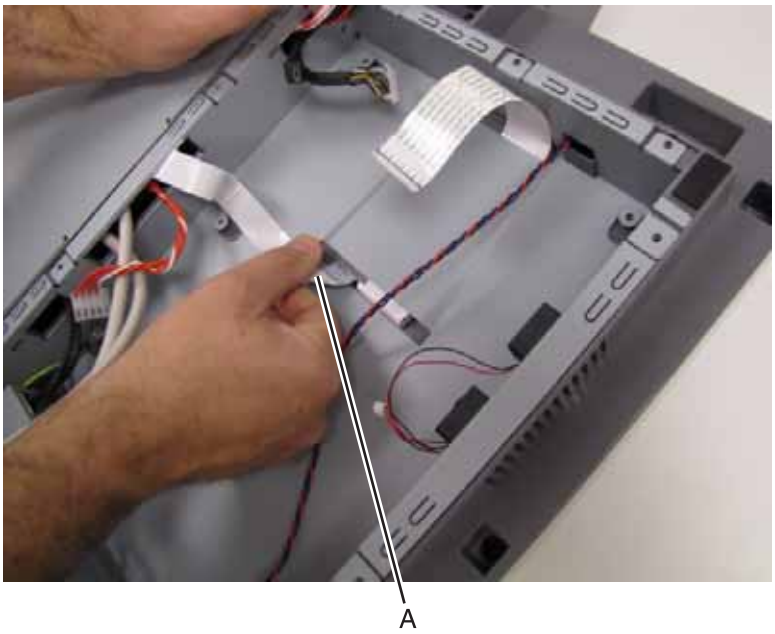
4. Disconnect the cable (B).

5. Remove the complete flatbed document cover.

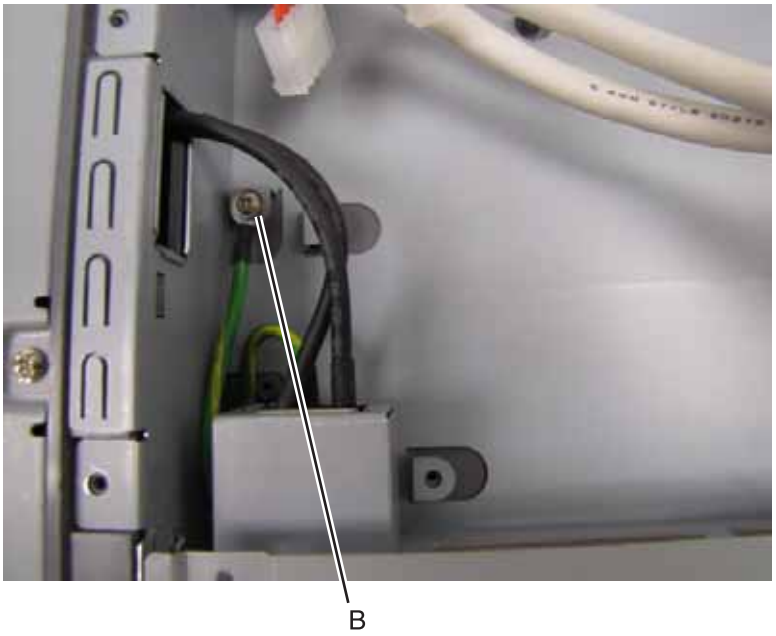
Controller cage fans removal

Note: To prevent damage, lock the flatbed scanner module while performing this repair.

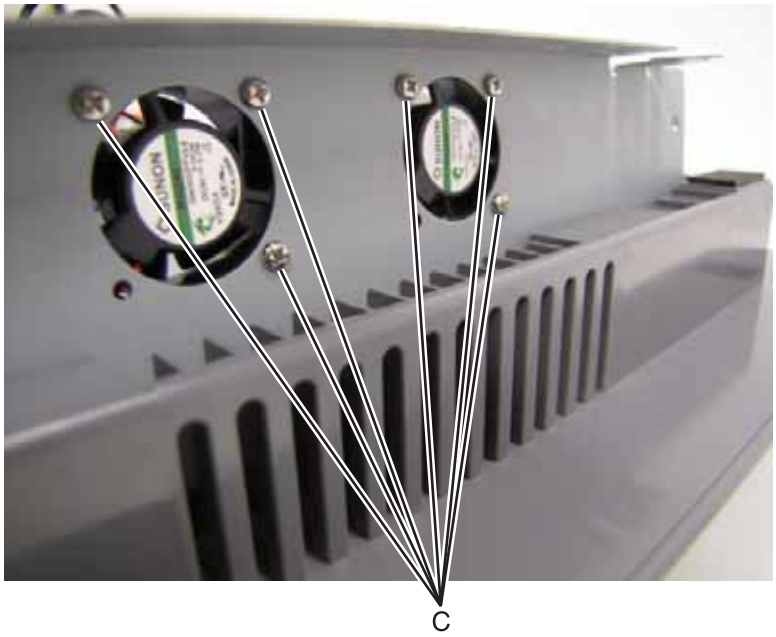
1. Remove the controller board. See **"Controller board removal" on page 4-58**.
2. Peel the ribbon cable (A) from the base of the controller cage.



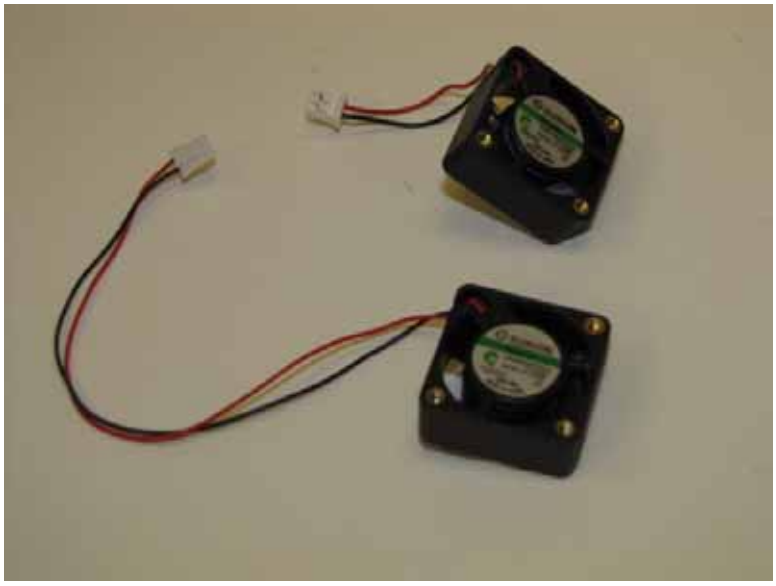
3. Remove the ground screw (B).



4. Lift the side of the cage enough to access the controller cage fans, and remove the six screws (C).

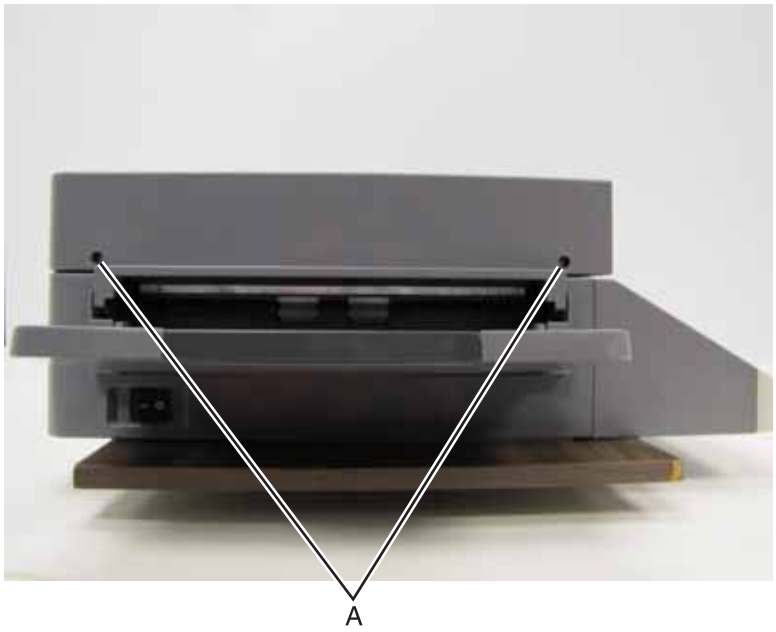


5. Remove the controller cage fans.

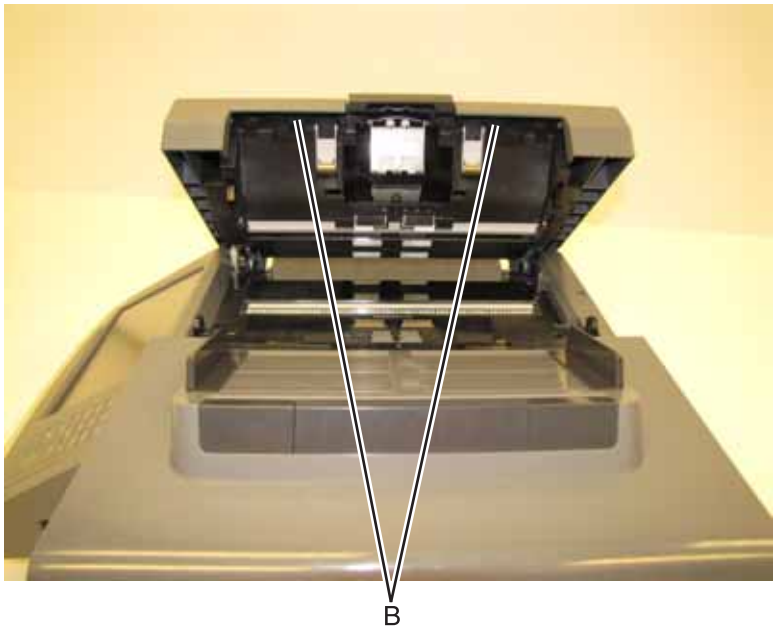


ADF top cover removal

1. Remove the two rubber caps and the two screws (A) from the left side of the ADF top cover.



2. Remove the two screws (B) from the bottom of the ADF top cover.



3. Lift the ADF top cover, and remove.

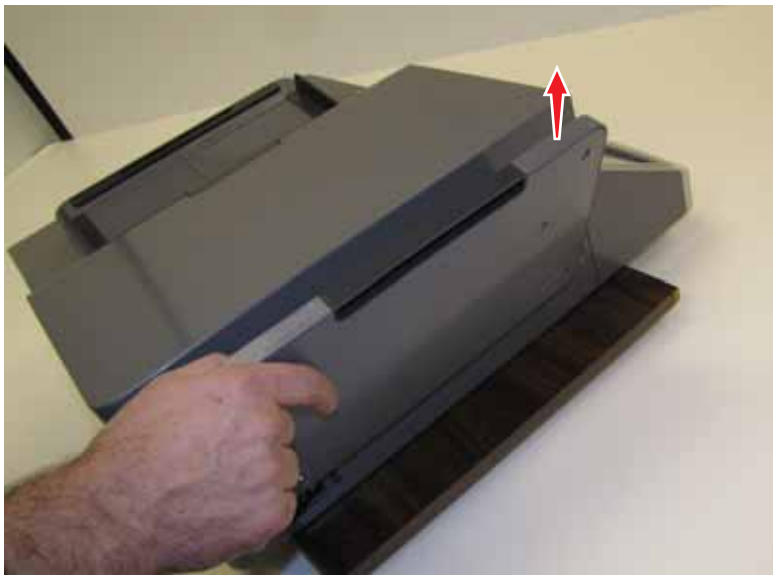
ADF latch handle removal

1. Remove the ADF top cover. See **“ADF top cover removal” on page 4-31**.
2. Remove the two screws (A) from under the ADF latch handle.

3. Lift the ADF latch handle, and remove.

ADF exit tray removal

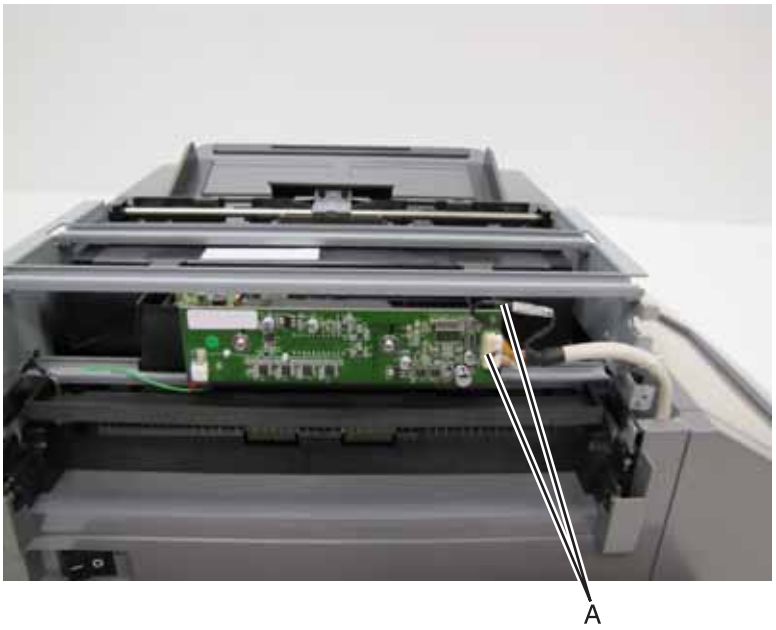
1. Rotate the ADF exit tray to an upward position.



2. Lift the ADF exit tray away from the scanner, and remove.

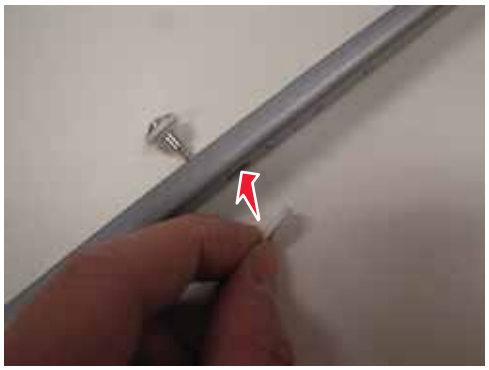
Upper ADF scanner module removal

1. Remove the ADF top cover. See **“ADF top cover removal” on page 4-31**.
2. Disconnect the two cables (A) from the right side of the card.



3. Remove the five screws (B) from the top of the ADF scanner.

Reinstallation note: Be sure to assemble the center screw correctly back into its position on the upper rail.



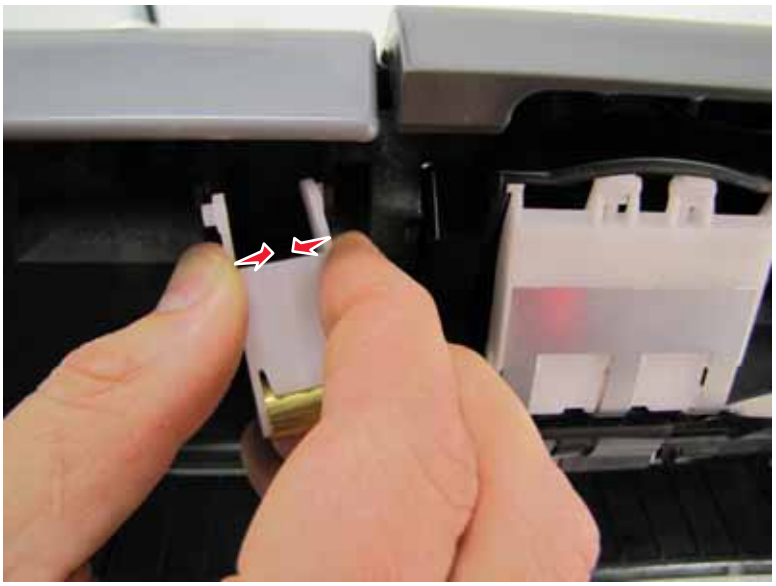
4. Lift and remove the two upper rails.

5. Remove the two screws (C) securing the upper ADF scanner.

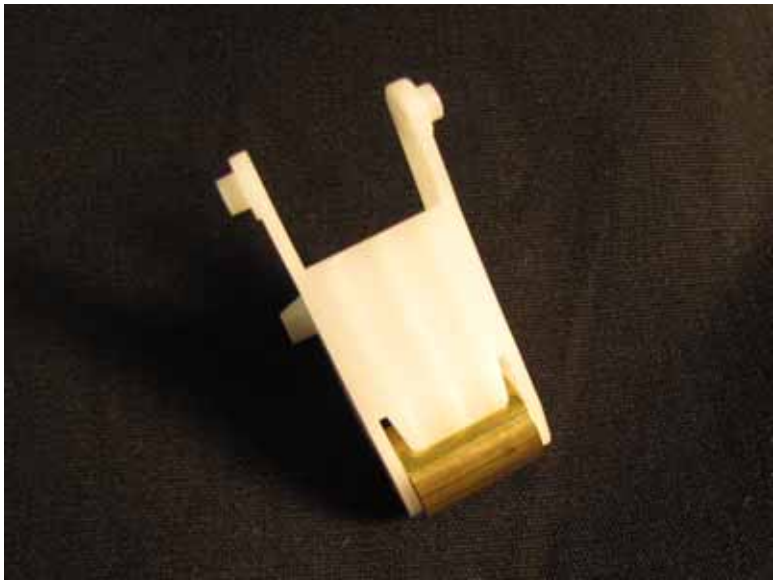
6. Lift the upper ADF scanner, and remove.

ADF entry idle roller removal

1. Squeeze the ADF entry idle roller inward, and pull out.

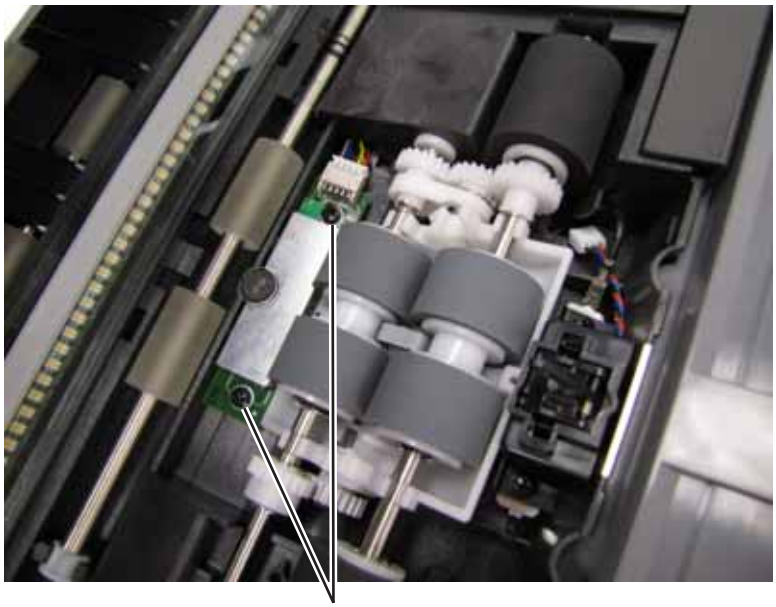


2. Remove the ADF entry idle roller.

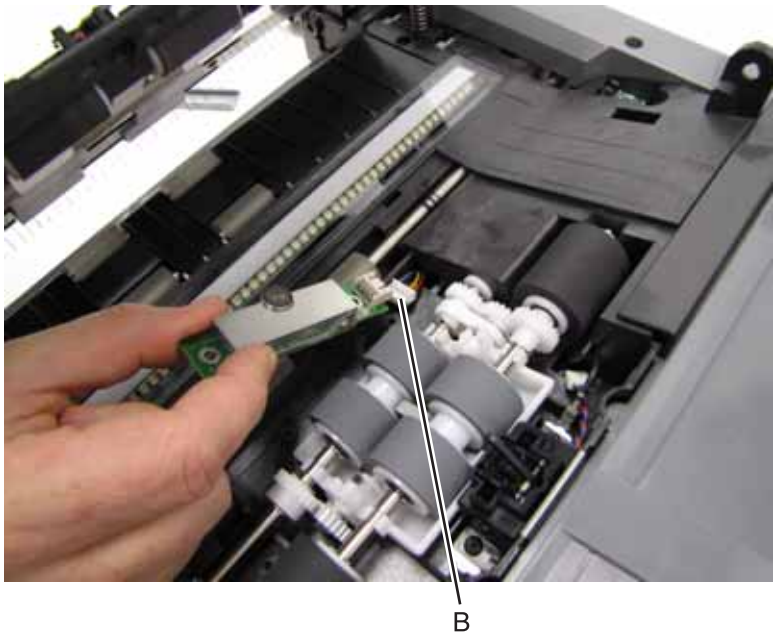


Multifeed sensor removal

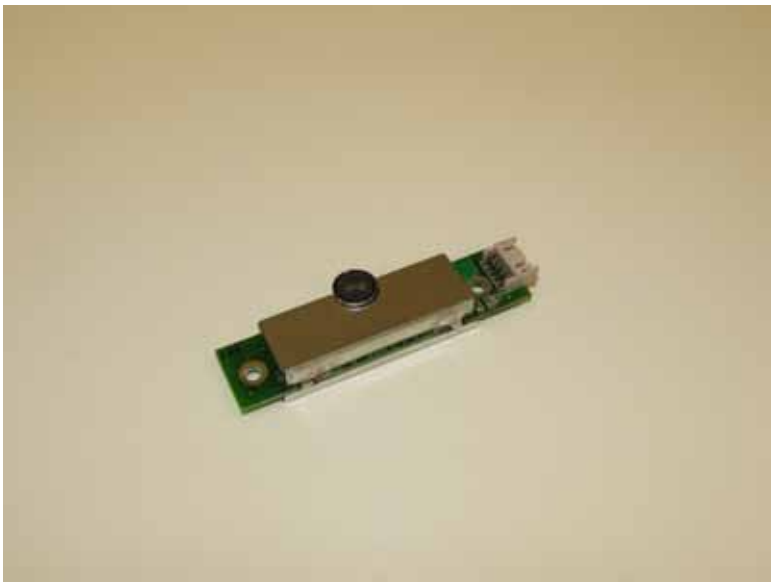
1. Open the ADF, and remove the separator pad. See **“Separator pad removal” on page 4-8**.
2. Remove the ADF pick roller cover, and the two screws (A) from the lower multi-pick sensor card.



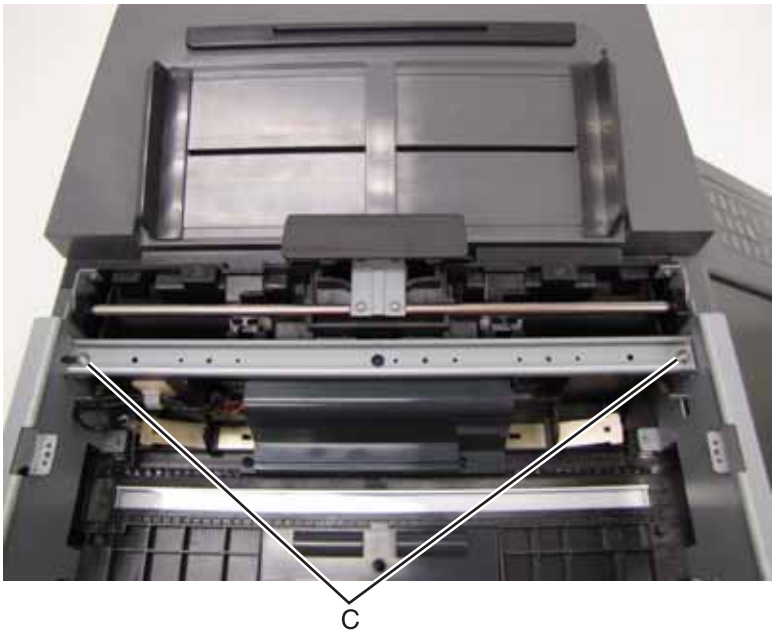
3. Disconnect the cable (B) from the lower multi-pick sensor card.



4. Remove the lower multi-pick sensor card.

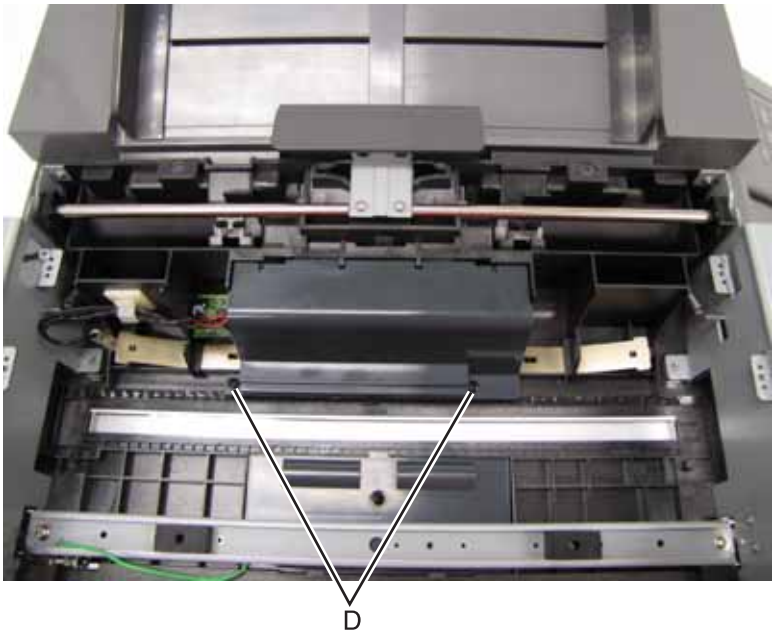


5. Close the ADF.
6. Remove the upper ADF scanner. See **“Upper ADF scanner module removal” on page 4-35**.
7. Remove the two screws (C) from the upper rail.



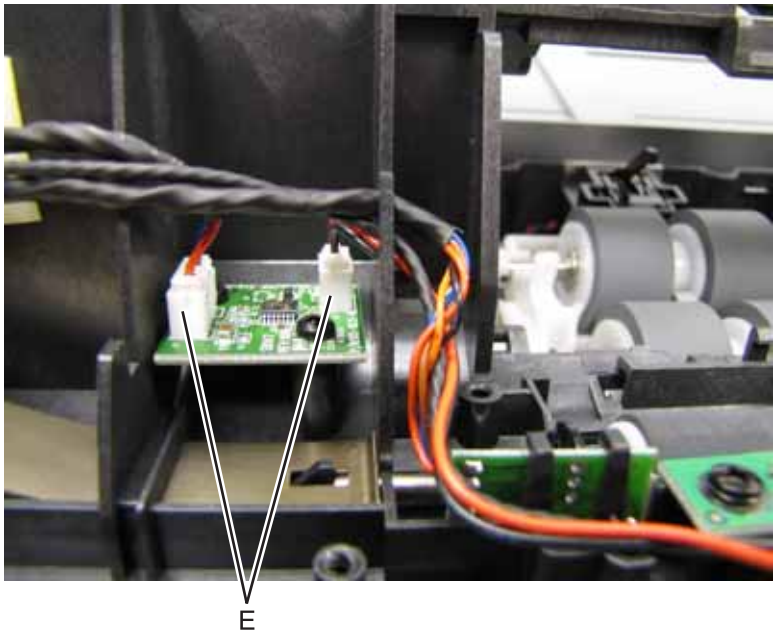
8. Remove the upper rail.

9. Remove the two screws (D) from the multi-pick sensor cover.

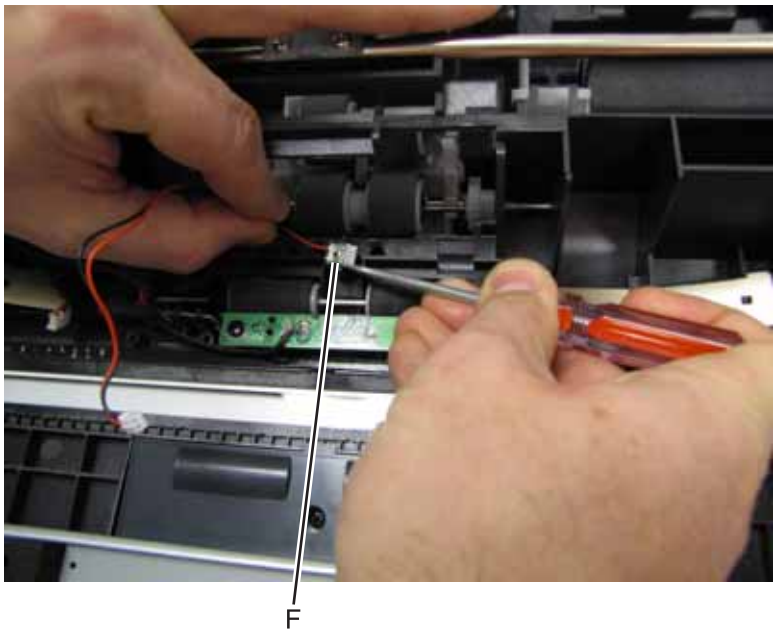


10. Lift, and remove the multi-pick sensor cover.

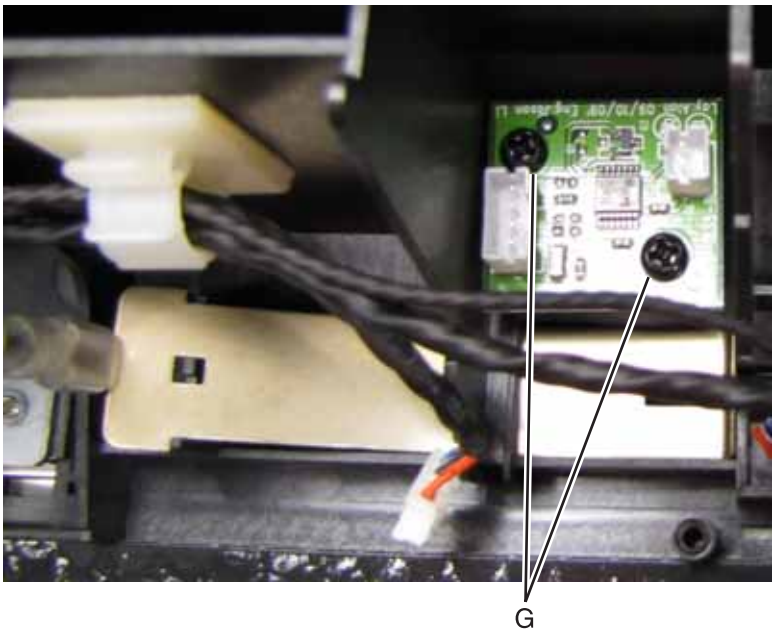
11. Disconnect the two cables (E) from the multi-pick sensor junction card.



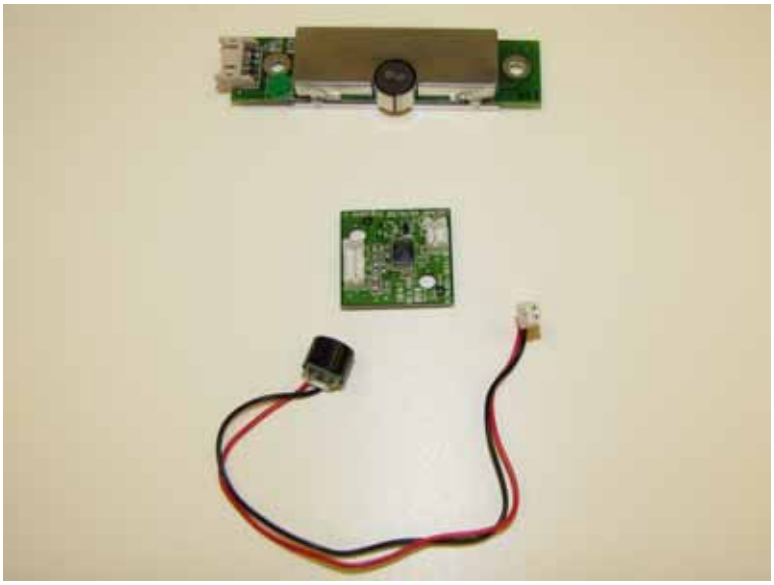
12. Using a screwdriver, remove the upper multi-pick sensor (F).



13. Remove the two screws (G) from the multi-pick sensor junction card.

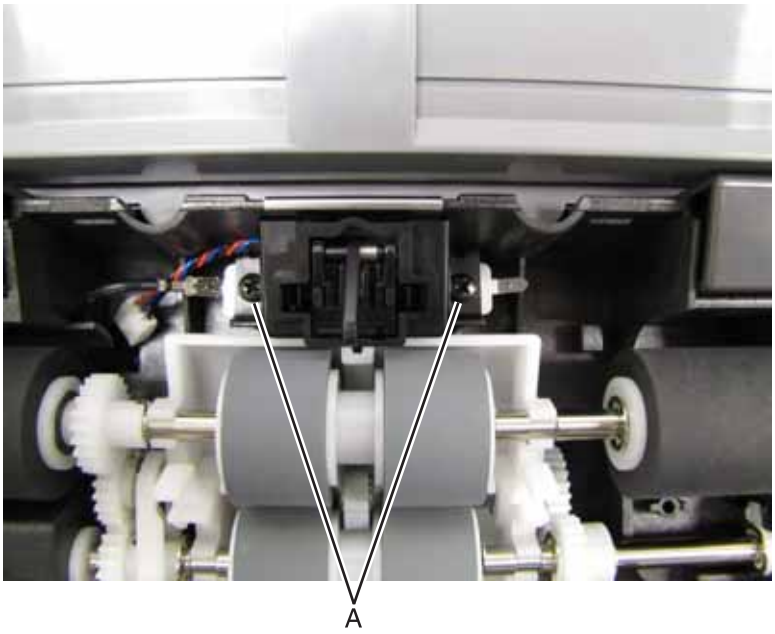


14. Remove the multi-pick sensor junction card.

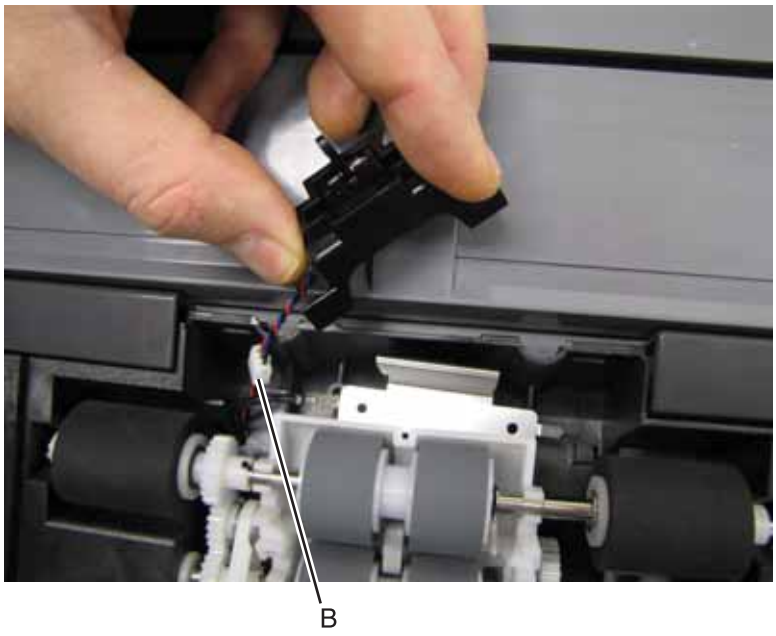


ADF paper present sensor removal

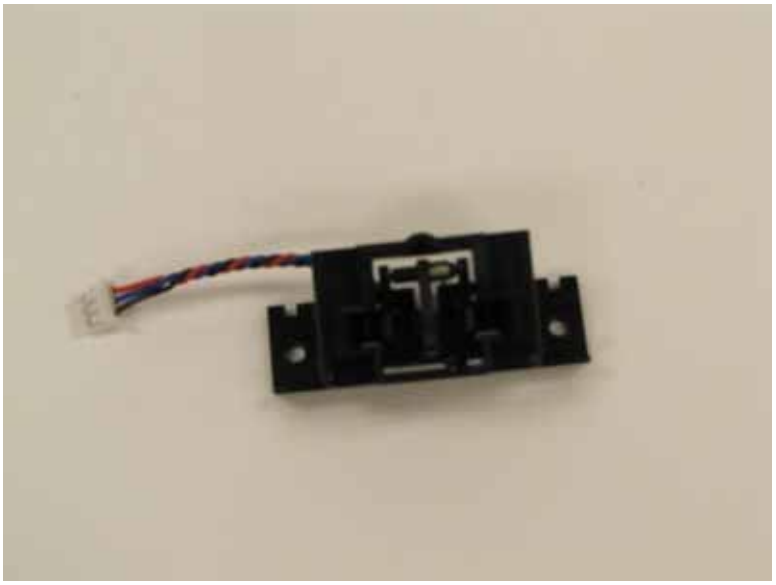
1. Remove the ADF pick roller access cover.
2. Remove the two screws (A) from the paper present sensor.



3. Disconnect the cable (B).

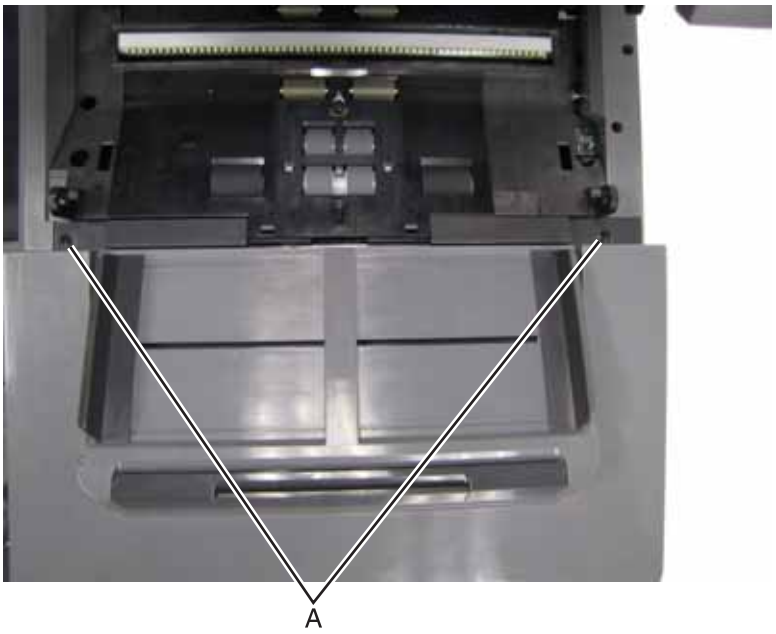


4. Remove the ADF paper present sensor.

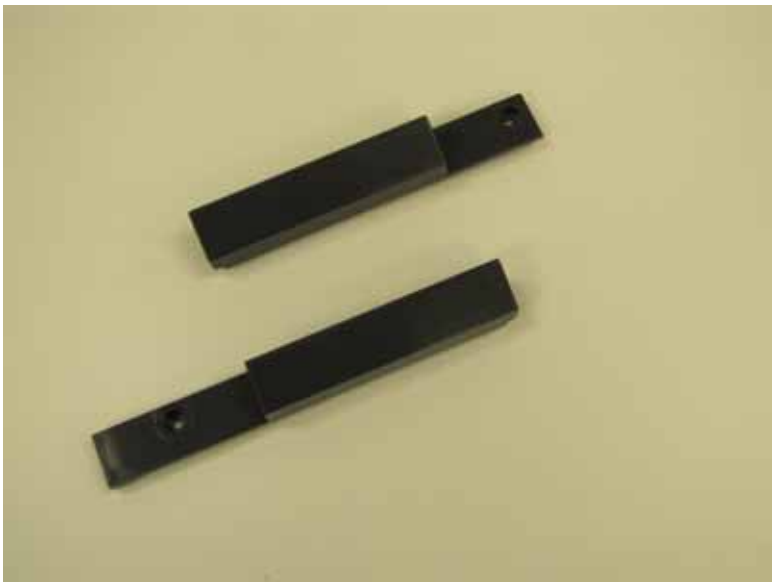


ADF front and rear entry guides removal

1. Open the ADF, and remove the two screws (A) from the front and rear entry guides.



2. Lift, and remove the front and rear entry guides.



Flatbed cover removal

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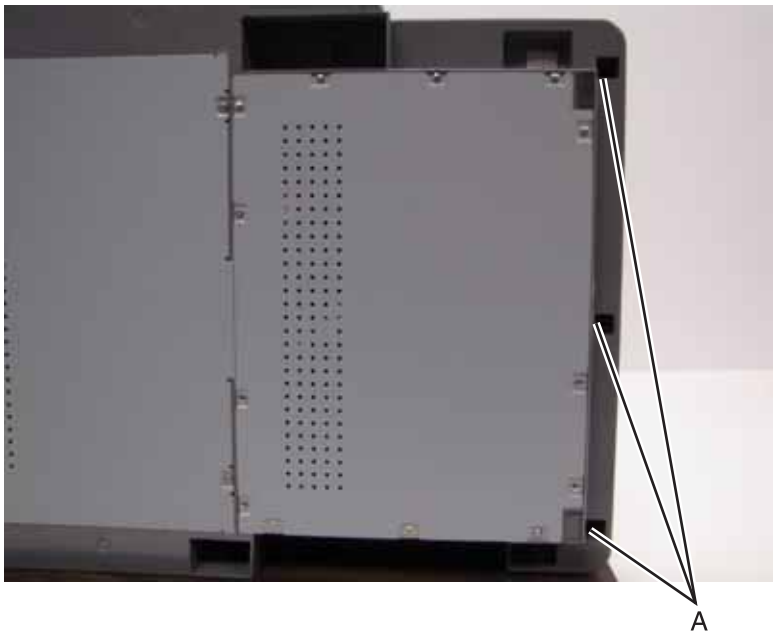
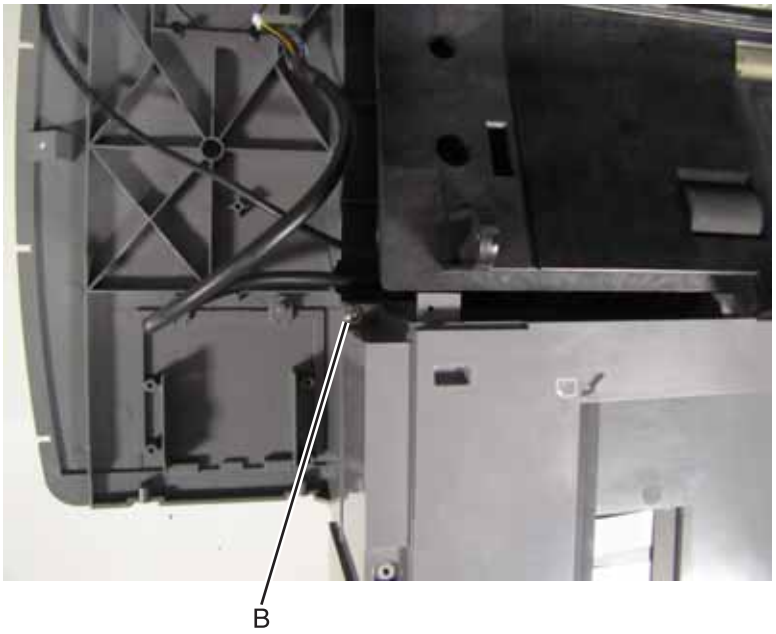
Note: To prevent damage, lock the flatbed scanner module while performing this repair.

1. Remove the complete flatbed document cover. See **“Complete flatbed document cover removal” on page 4-27**.
2. Remove the operator panel assembly. See **“Operator panel assembly removal” on page 4-17**.
3. Remove the ADF front and rear entry guides. See **“ADF front and rear entry guides removal” on page 4-47**.
4. Lock the flatbed scanner in the home position, and then place the scanner on its rear.
5. Remove the three screws (A) from the right rear side of the scanner.

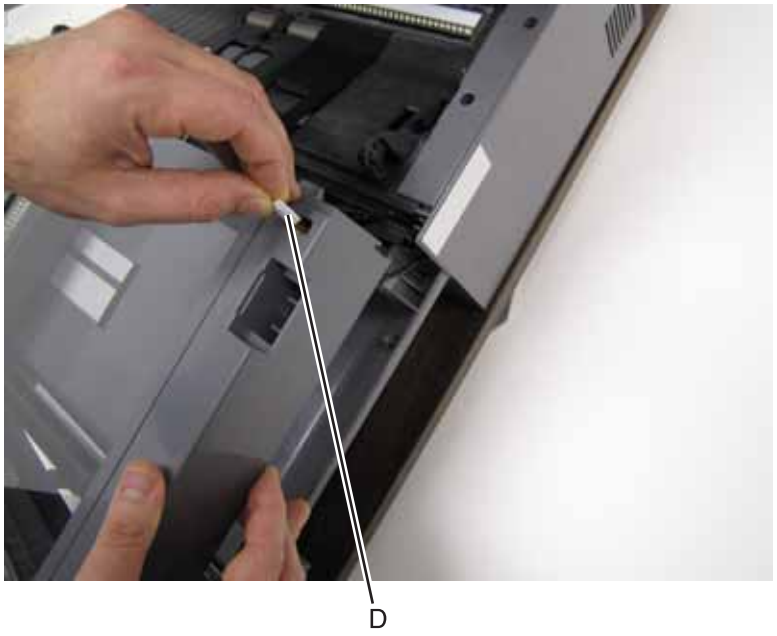


6. Place the scanner right-side up, and open the ADF.
7. Remove the screw (B) from the top left corner of the flatbed cover.



8. Remove the two screws (C) from the rear of the flatbed cover.

9. Lift the flatbed cover from the scanner, and thread the cable (D) through the opening.

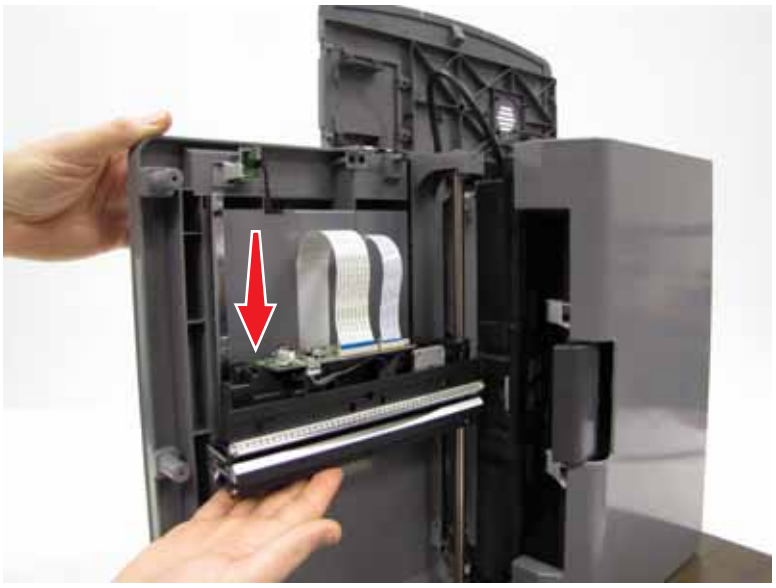


10. Remove the flatbed cover.

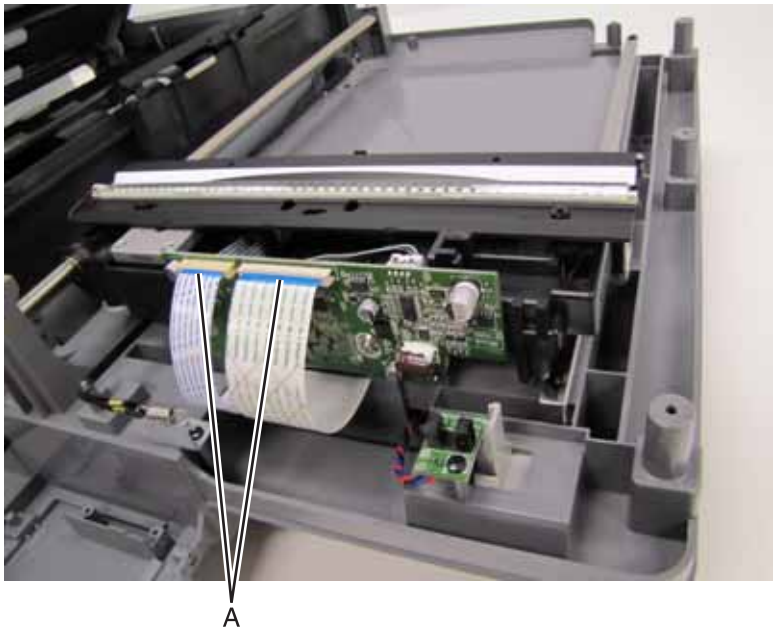
Flatbed scanner removal

Note: To prevent damage, lock the flatbed scanner module while performing this repair.

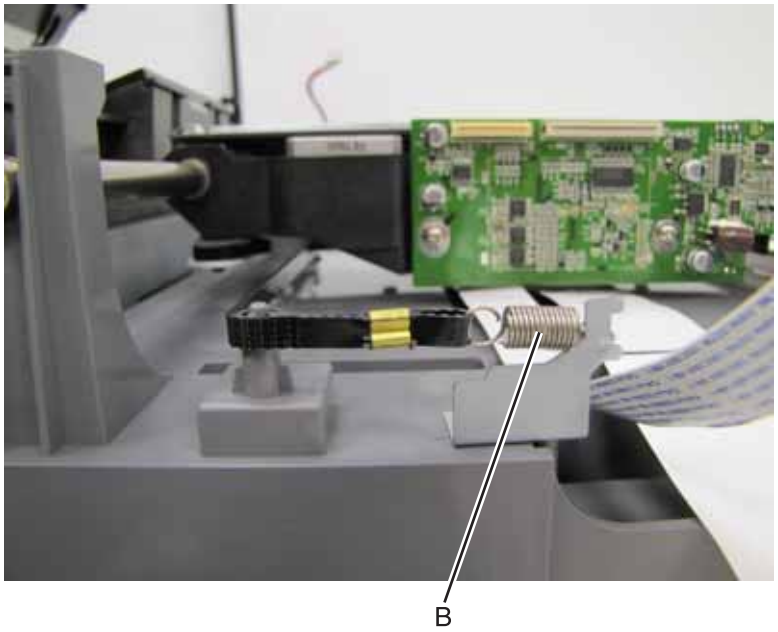
1. Remove the flatbed cover. See **"Flatbed cover removal" on page 4-48**.
2. Unlock the flatbed scanner from its home position, and slide to the bottom.



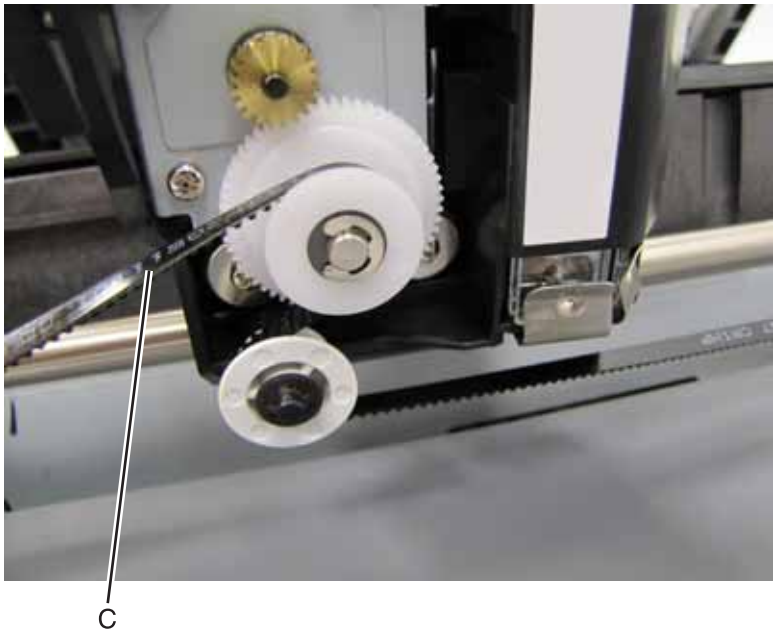
3. Disconnect the two flathead cables (A) from the flatbed scanner module.



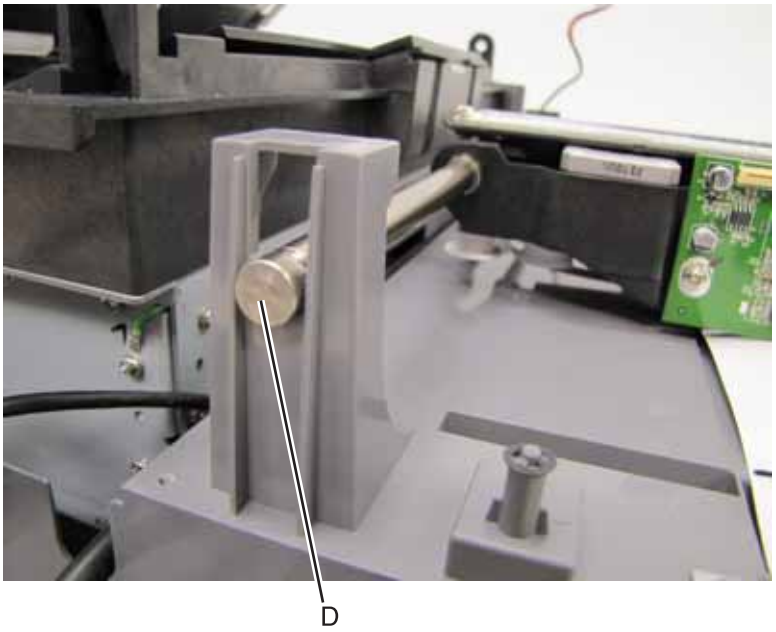
4. Unhook the tension spring (B).



5. Remove the belt (C) from the flatbed scanner.



6. Pull the rod (D) up to release it from the scanner base.



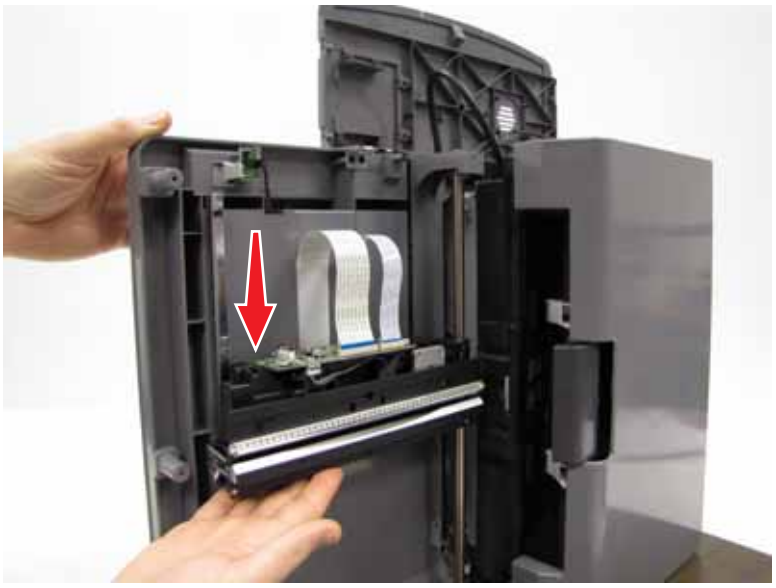
7. Pull the rod forward while lifting up on the flatbed scanner.

8. Remove the flatbed scanner.

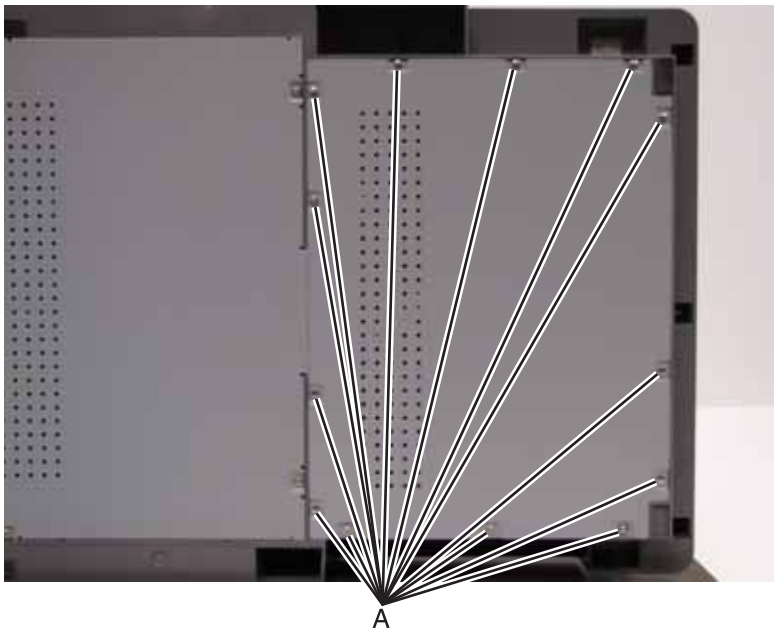
Flatbed home position sensor removal

Note: To prevent damage, lock the flatbed scanner module while performing this repair.

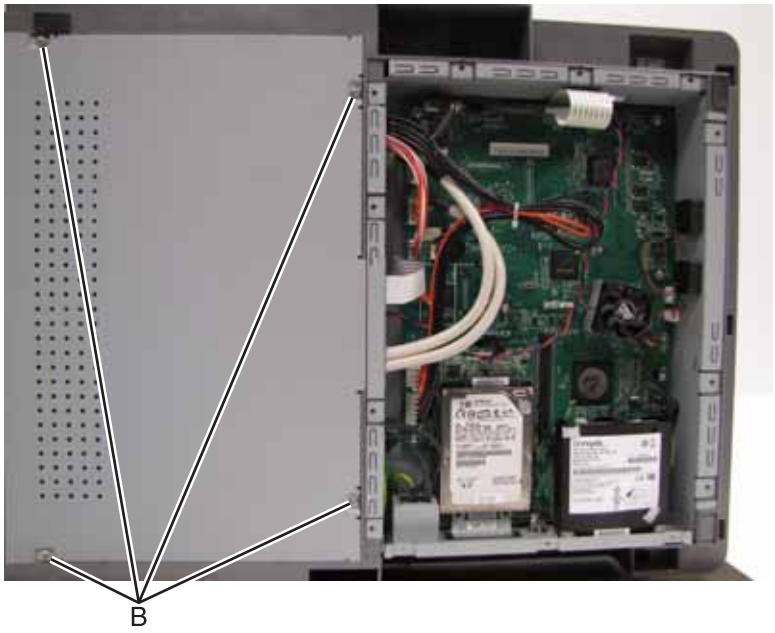
1. Remove the flatbed cover. See **"Flatbed cover removal" on page 4-48**.
2. Unlock the flatbed scanner from its home position, and slide to the bottom.



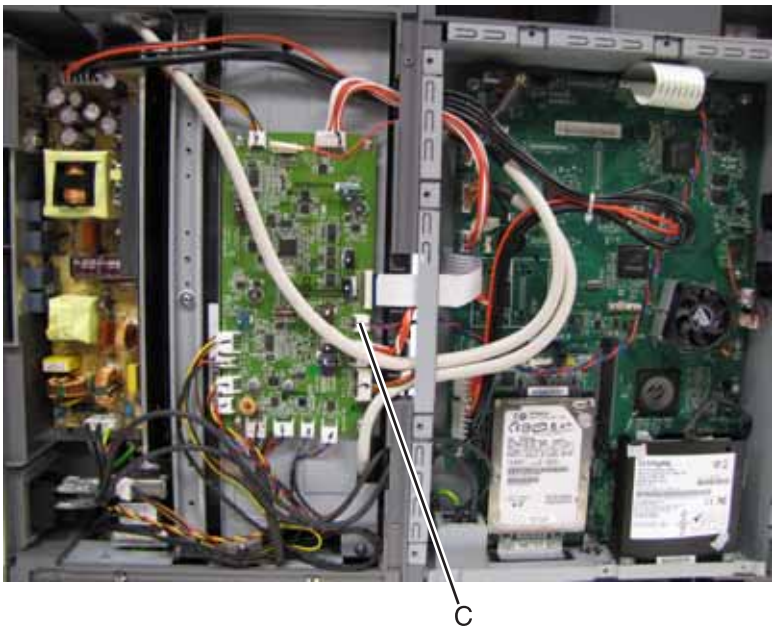
3. Place the scanner up on its rear, and remove the thirteen screws (A) from the controller access cover.



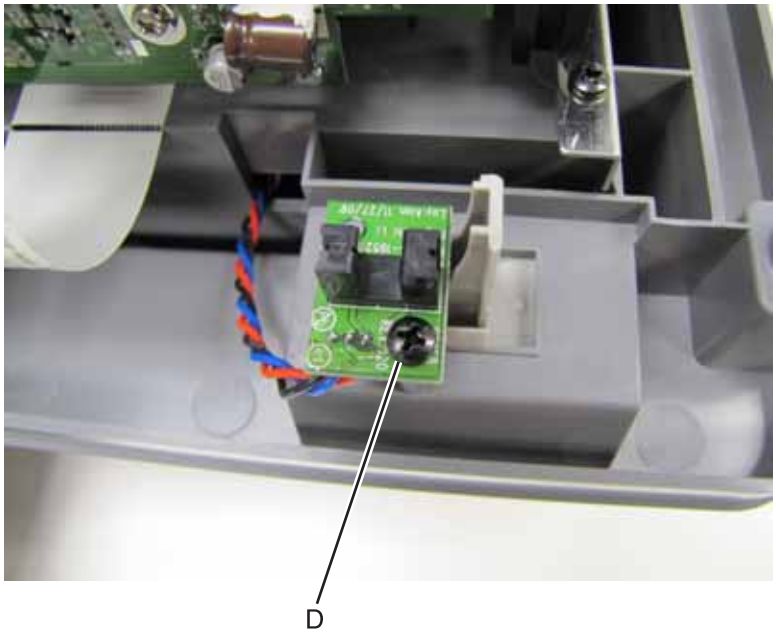
4. Remove the four screws (B) from the engine access cover.



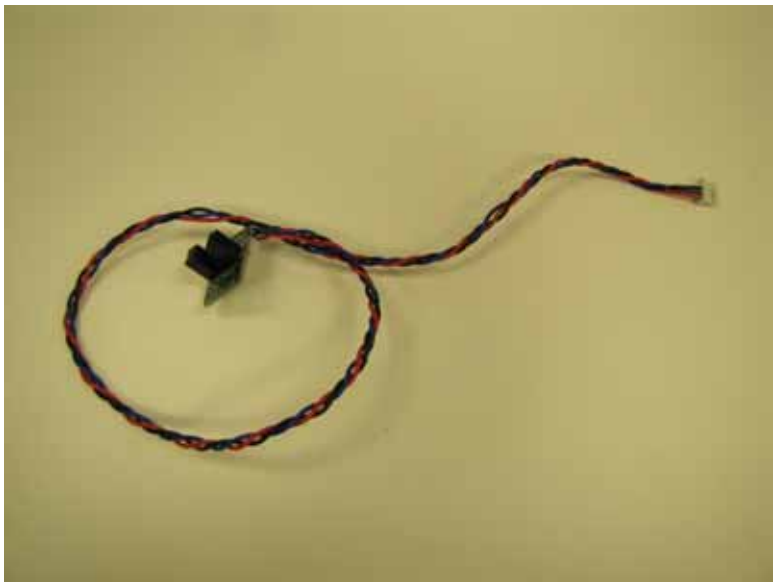
5. Disconnect the home position cable (C) from J7 on the engine board.



6. Remove the screw (D) from the home sensor.



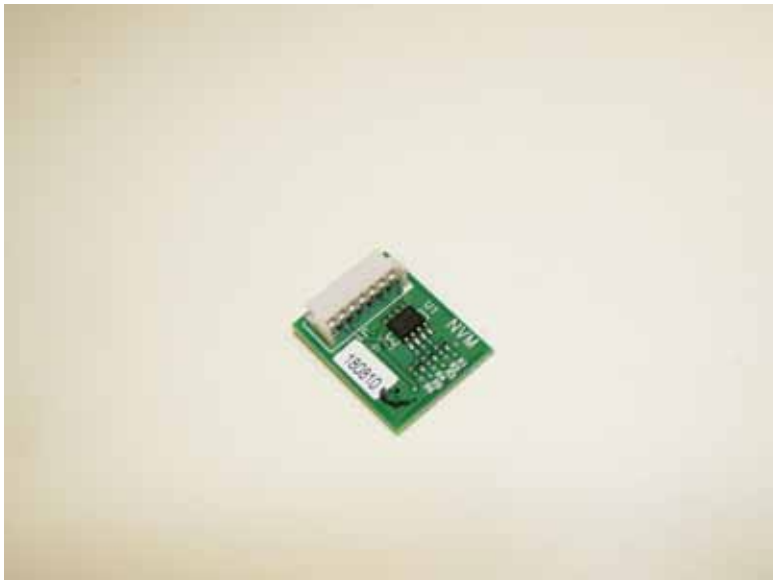
7. Remove the flatbed home position sensor.



Controller board removal

Note: To prevent damage, lock the flatbed scanner module while performing this repair.

1. Remove the fax card.
2. Remove the hard disk drive.
3. Disconnect all cables from the controller board, and remove the NVRAM card.



4. Remove the seven screws (A) from the controller board.

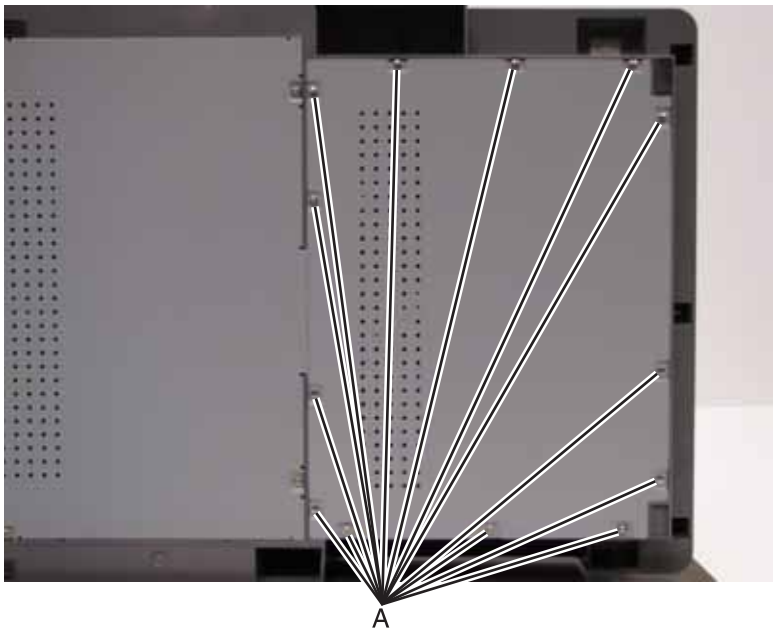
5. Remove the controller board.

Note: Be sure to reinstall the NVRAM card on the new controller board. The NVRAM card mirrors settings previously set on the device.

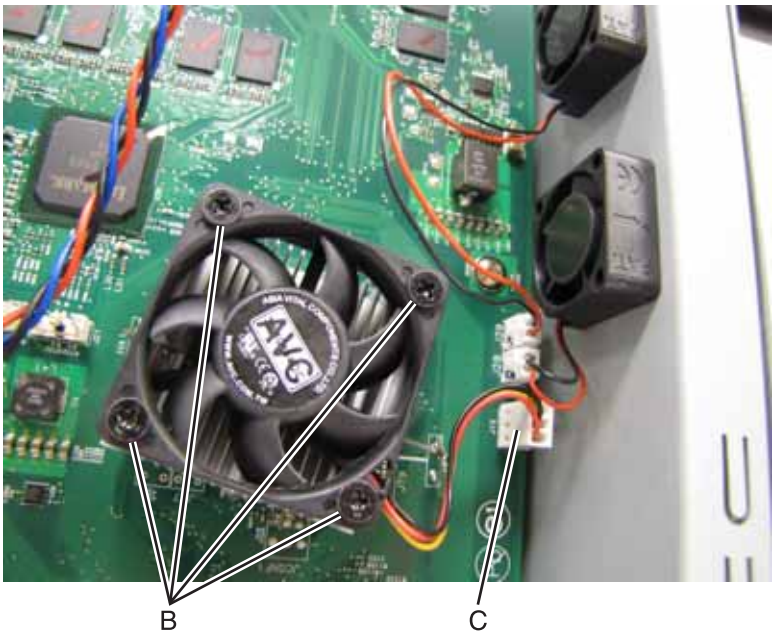
CPU cooling fan removal

Note: To prevent damage, lock the flatbed scanner module while performing this repair.

1. Place the scanner up on its rear.
2. Remove the thirteen screws (A) from the controller access cover.



3. Remove the four screws (B), and disconnect the cable (C).

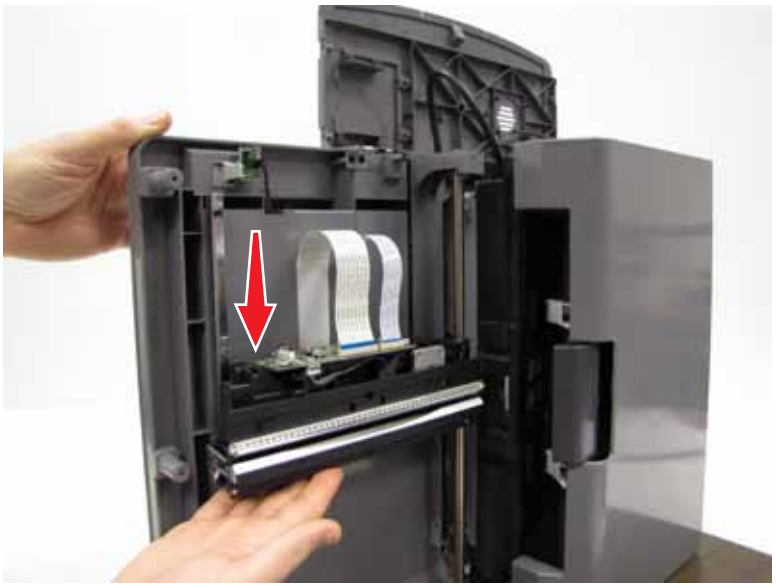


4. Remove the CPU cooling fan.

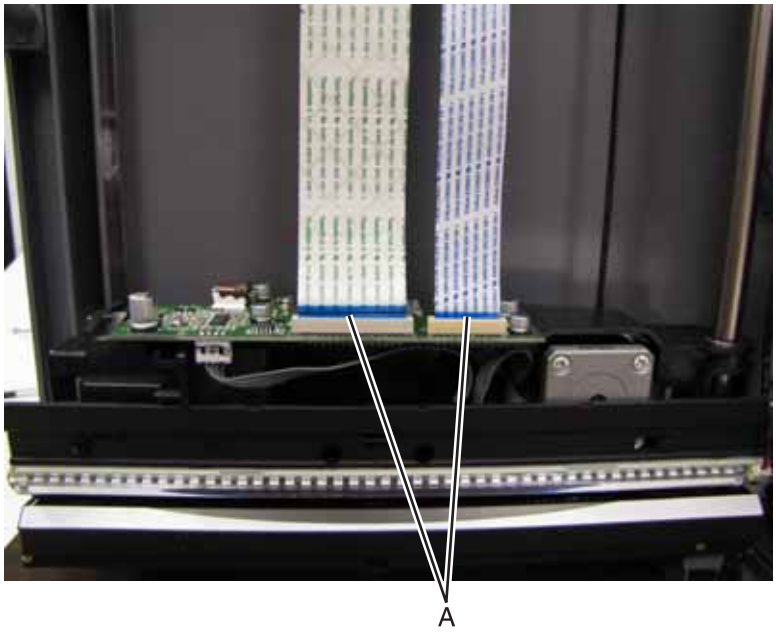
Flatbed scanner cables removal

Note: To prevent damage, lock the flatbed scanner module while performing this repair.

1. Remove the flatbed cover. See **"Flatbed cover removal" on page 4-48**.
2. Unlock the flatbed scanner from its home position, and slide to the bottom.

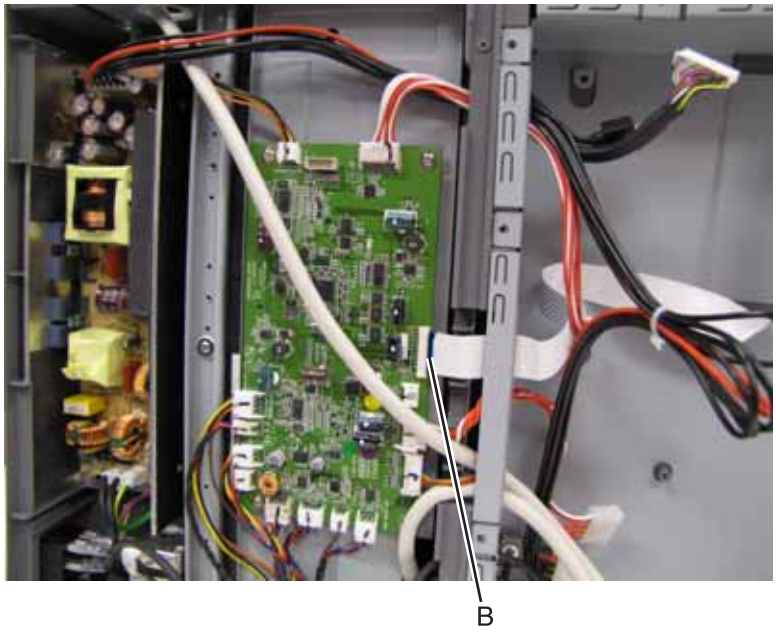


3. Place the scanner on its rear, and disconnect the two cables (A) from the flatbed scanner.

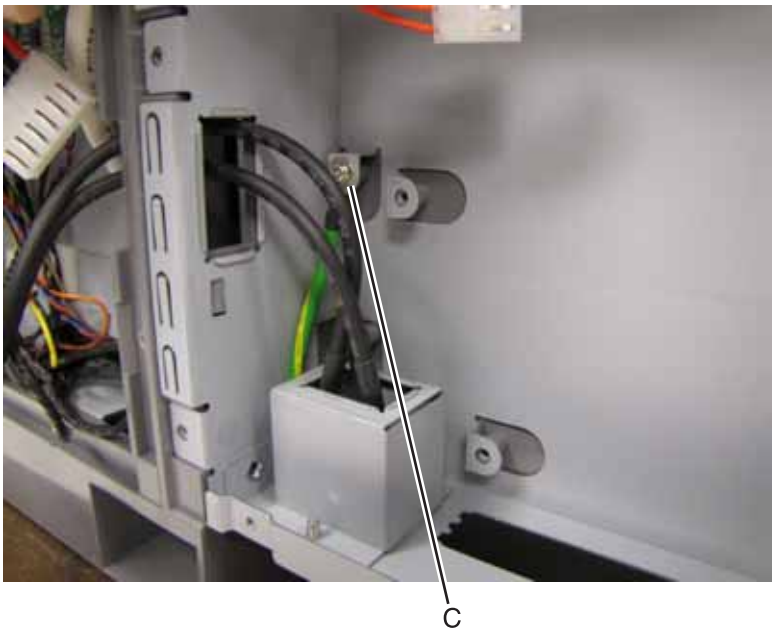


4. Remove the controller board. See **"Controller board removal" on page 4-58**.

5. Disconnect the cable (B) from J6 on the engine board.



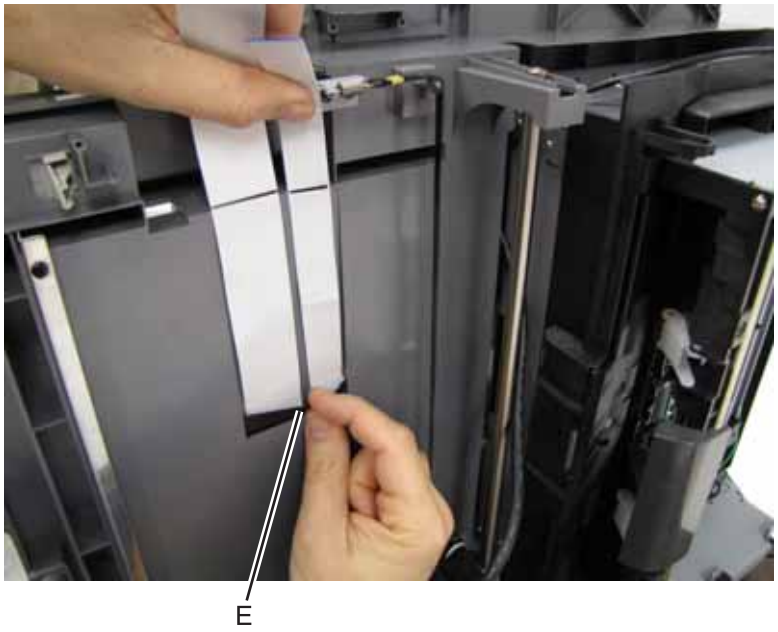
6. Remove the ground screw (C).



7. Peel the cable (D) from the controller cage.

8. Remove the cable guide (E).

Note: When reinstalling the flatbed scanner cables, be sure to line up the positioning guides as shown in the picture below.



9. Gently pull the controller cage away from the base of the scanner.

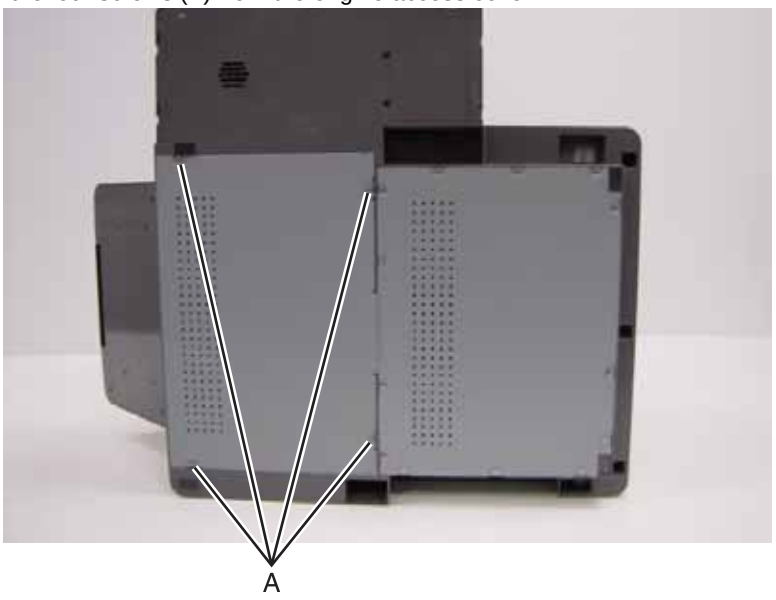
Warning: Be careful to not damage any cables when pulling the controller cage away from the base of the scanner.

10. Slide the flatbed scanner cables through the slot in the scanner base, and remove.

Power supply removal

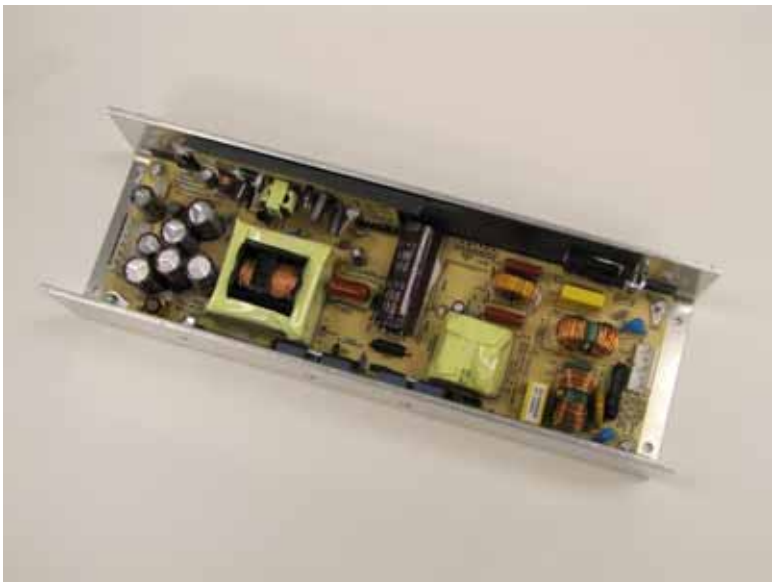
Note: To prevent damage, lock the flatbed scanner module while performing this repair.

1. Remove the four screws (A) from the engine access cover.



2. Remove the two screws (B), and disconnect the two cables (C).

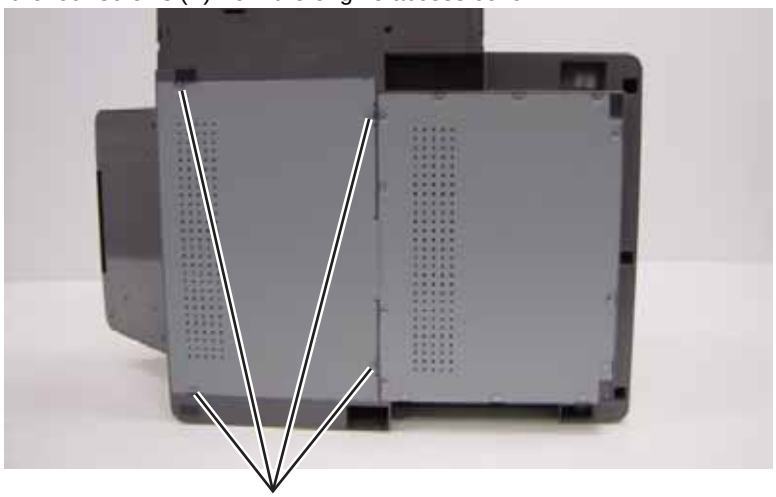
3. Remove the power supply.



Engine board removal

Note: To prevent damage, lock the flatbed scanner module while performing this repair.

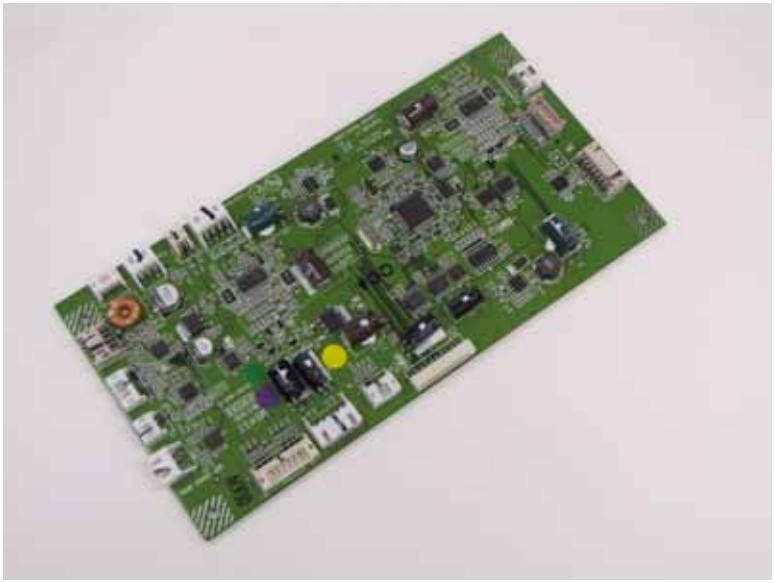
1. Remove the four screws (A) from the engine access cover.



2. Remove all cables and connections from the engine board.

3. Remove the four screws (B).

4. Remove the engine board.



Complete ADF scanner assembly removal

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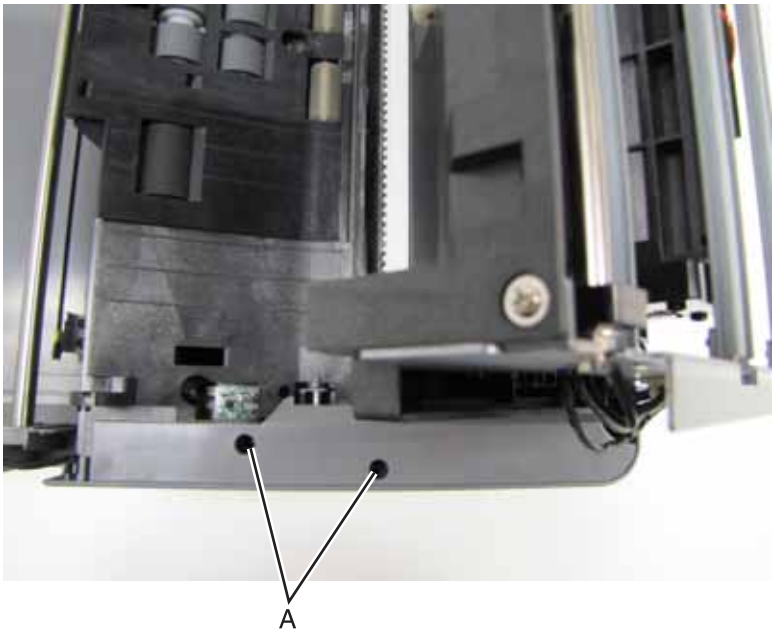
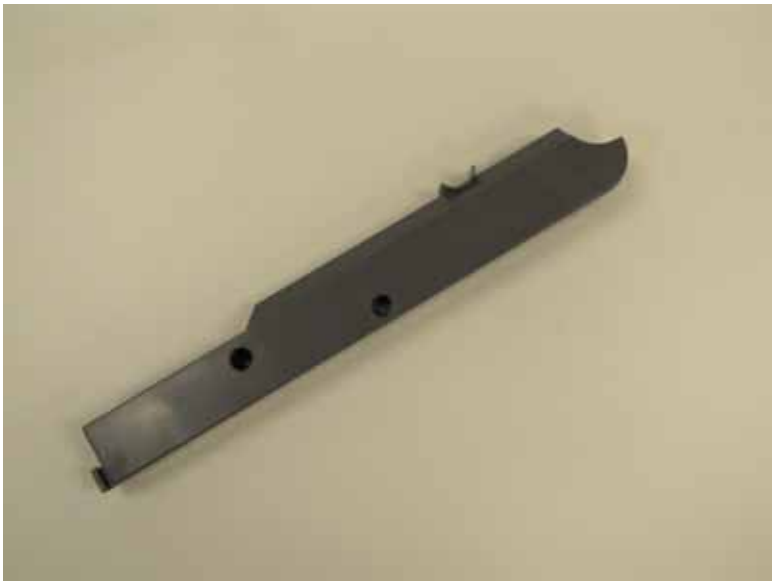
Note: To prevent damage, lock the flatbed scanner module while performing this repair.

1. Remove the ADF top cover. See **“ADF top cover removal” on page 4-31**.
2. Remove the operator panel assembly. See **“Operator panel assembly removal” on page 4-17**.
3. Remove the flatbed cover. See **“Flatbed cover removal” on page 4-48**.
4. Remove the two screws (A) from the rear ADF cover.

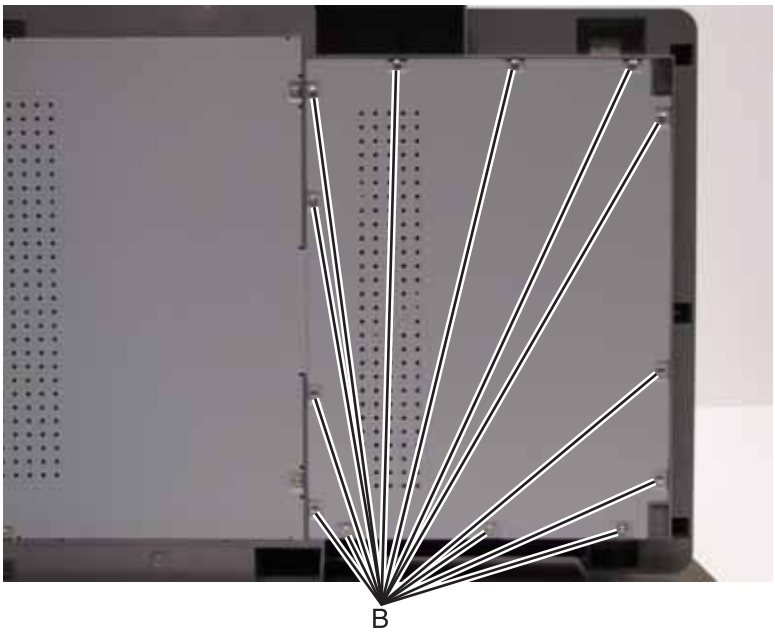


5. Remove the rear ADF cover.



6. Remove the power supply. See **“Power supply removal” on page 4-65**.
7. Remove the engine board. See **“Engine board removal” on page 4-67**.

8. Remove the thirteen screws (B) from the controller access cover.



9. Disconnect the cables from J5 and J6 on the controller board.

10. Remove the four screws (C).

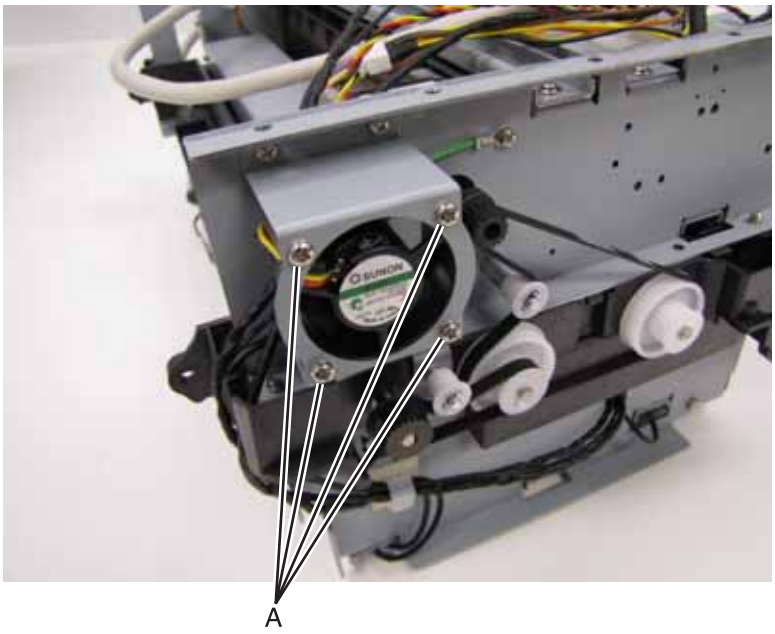
11. Pull up on the complete ADF scanner.

12. Remove the complete ADF scanner.

Power supply cooling fan removal

Note: To prevent damage, lock the flatbed scanner module while performing this repair.

1. Remove the complete ADF scanner assembly. See **"Complete ADF scanner assembly removal" on page 4-70**.
2. Remove the four screws (A) from the power supply cooling fan.

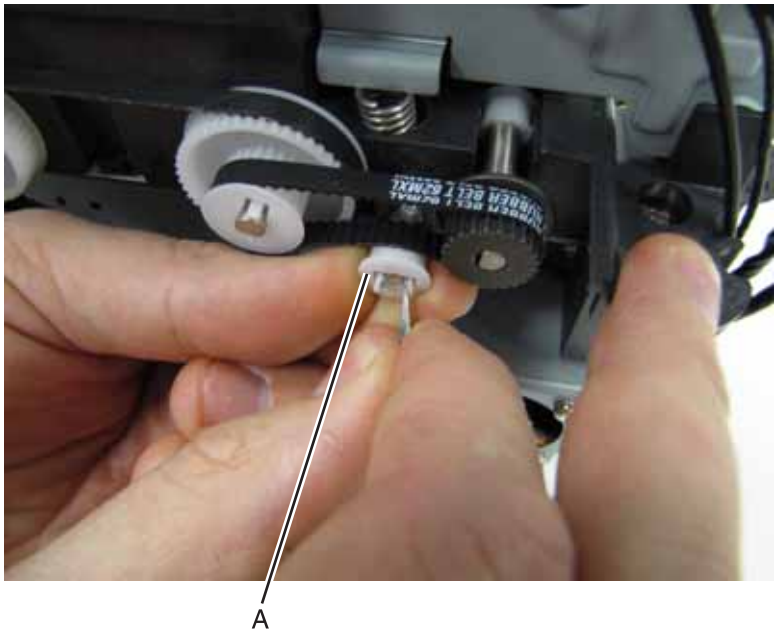


3. Remove the power supply cooling fan.

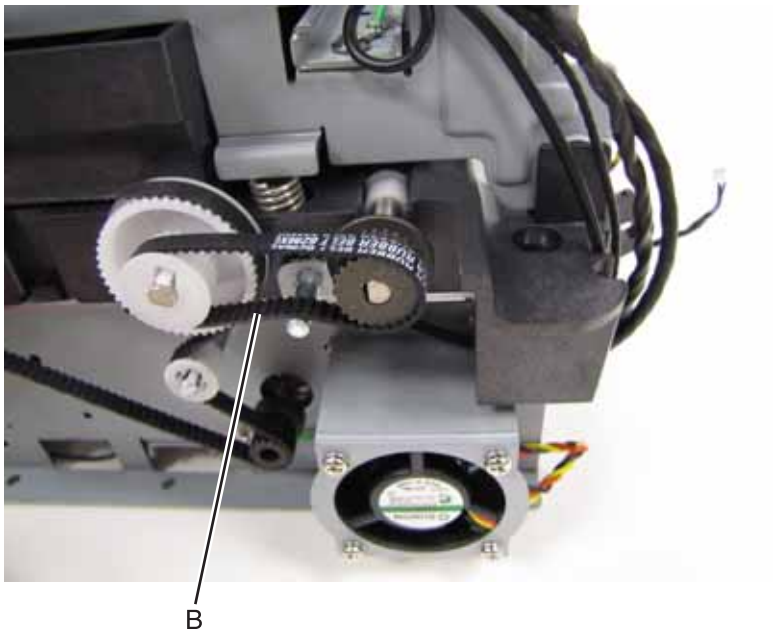
ADF feed roller drive belts removal

Note: To prevent damage, lock the flatbed scanner module while performing this repair.

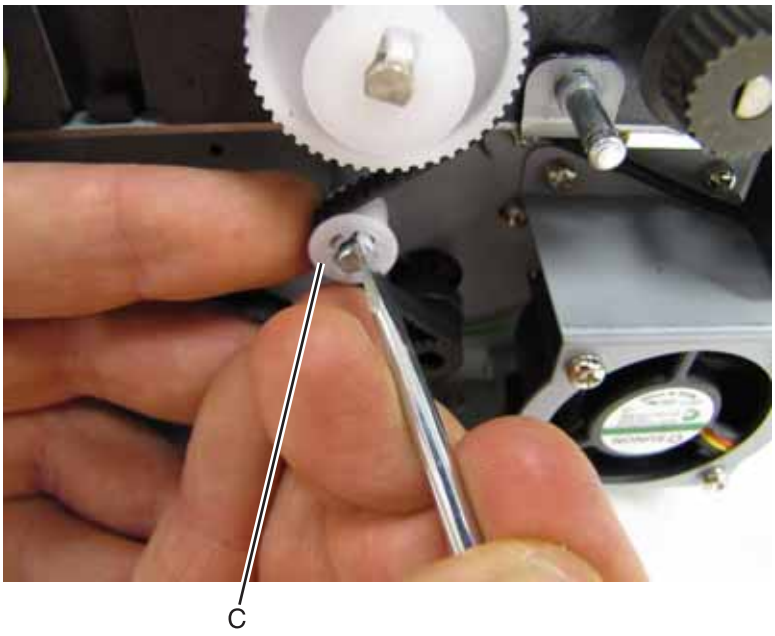
1. Remove the complete ADF scanner assembly. See **"Complete ADF scanner assembly removal" on page 4-70**.
2. Use a flathead screwdriver to remove the small ADF feed roller drive belt tensioner (A).



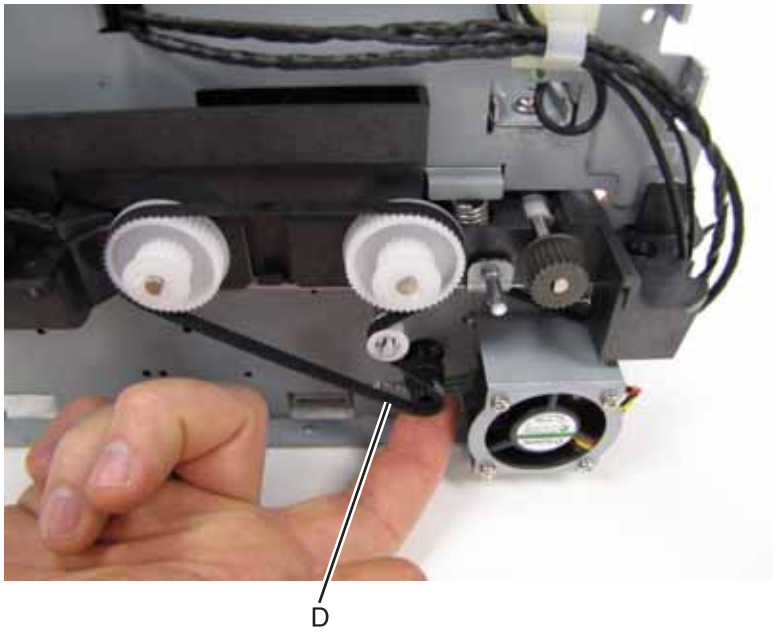
3. Slip the small ADF feed roller drive belt (B) from its place on the pulleys.



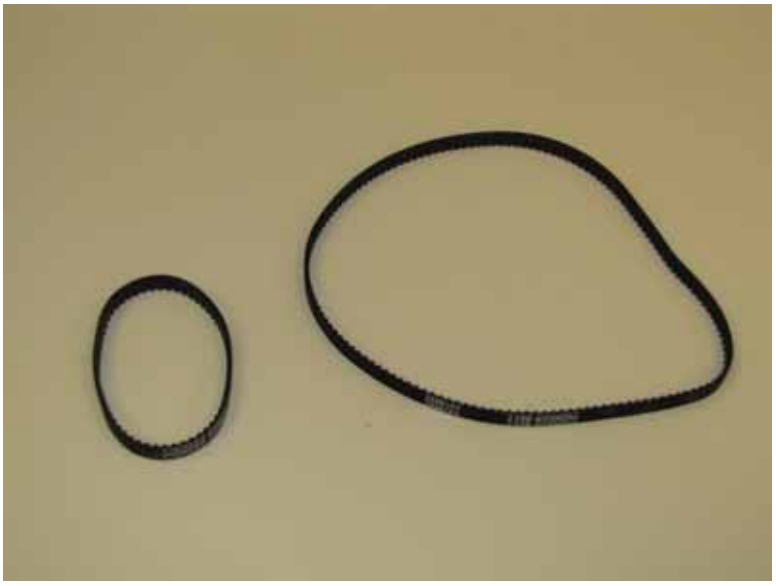
4. Use a flathead screwdriver to remove the large ADF feed roller drive belt tensioner (C).



5. Slip the large ADF feed roller drive belt (D) from its place on the pulleys.



6. Remove the ADF feed roller drive belts.



Lower ADF scanner module removal

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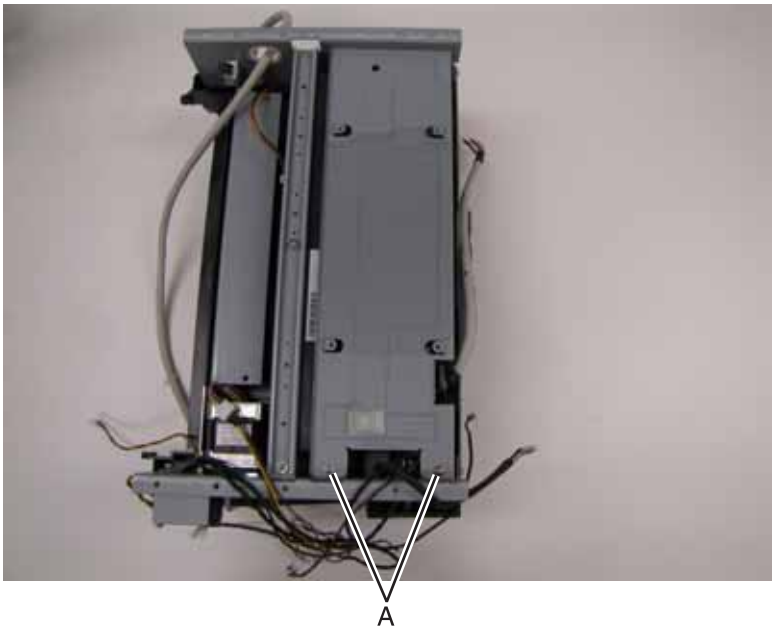
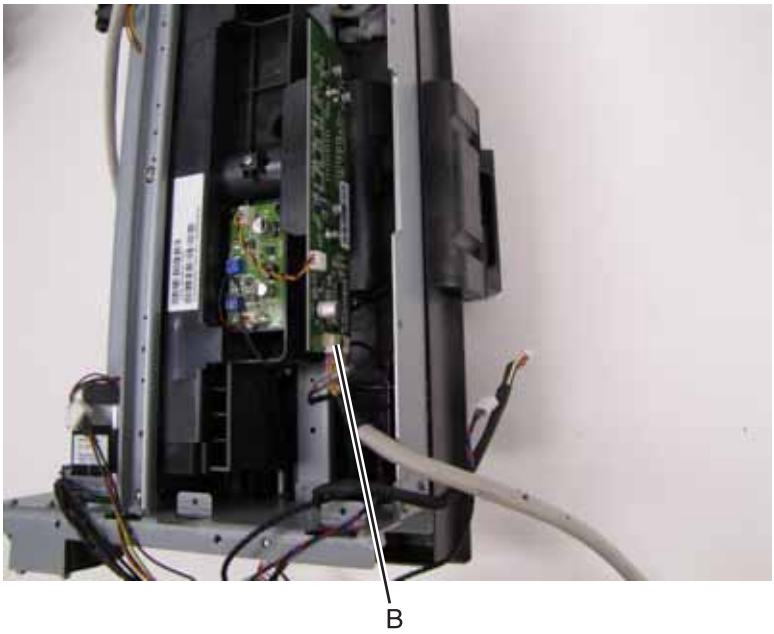
Note: To prevent damage, lock the flatbed scanner module while performing this repair.

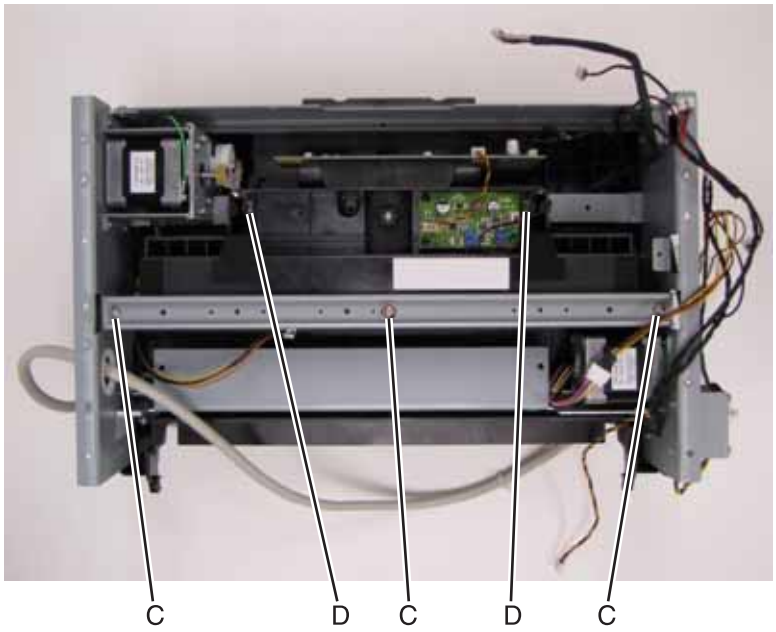
1. Remove the complete ADF scanner assembly. See **"Complete ADF scanner assembly removal" on page 4-70**.
2. Remove the two screws (A), and remove the metal panel.



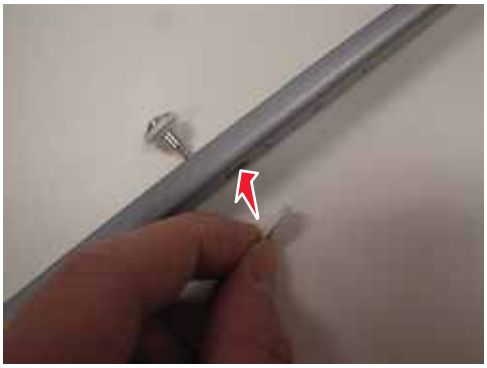
3. Disconnect the cable (B) from the lower ADF scanner.



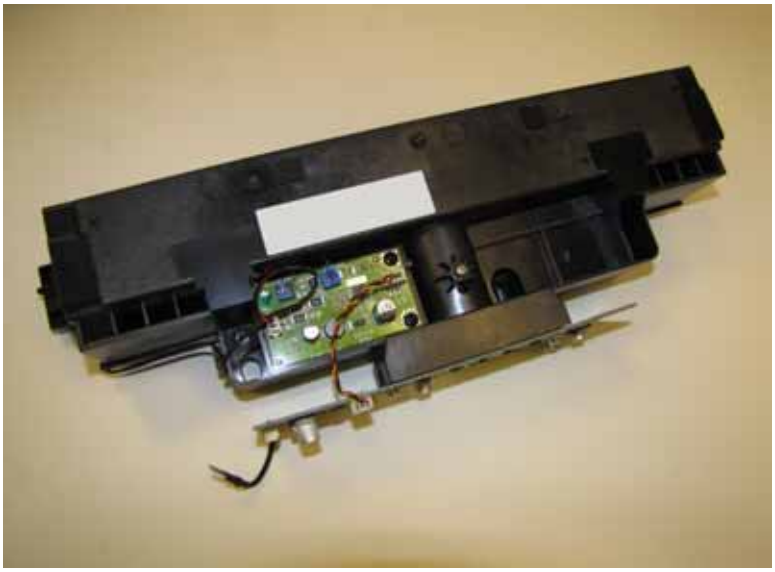
4. Remove the three screws (C) from the rail, and the two screws (D) from the lower ADF scanner.



Reinstallation note: Be sure to assemble the center screw correctly back into its position on the rail.



5. Remove the lower ADF scanner.



Feed roller motor removal

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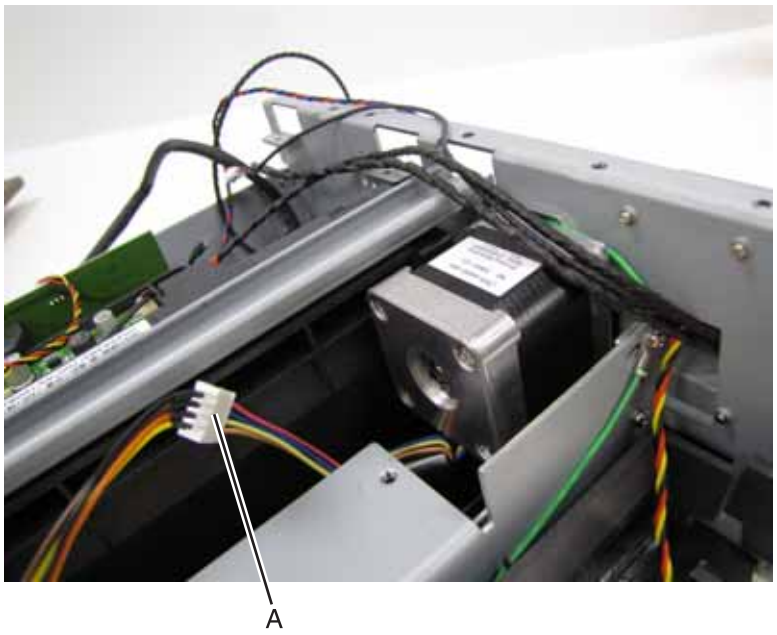
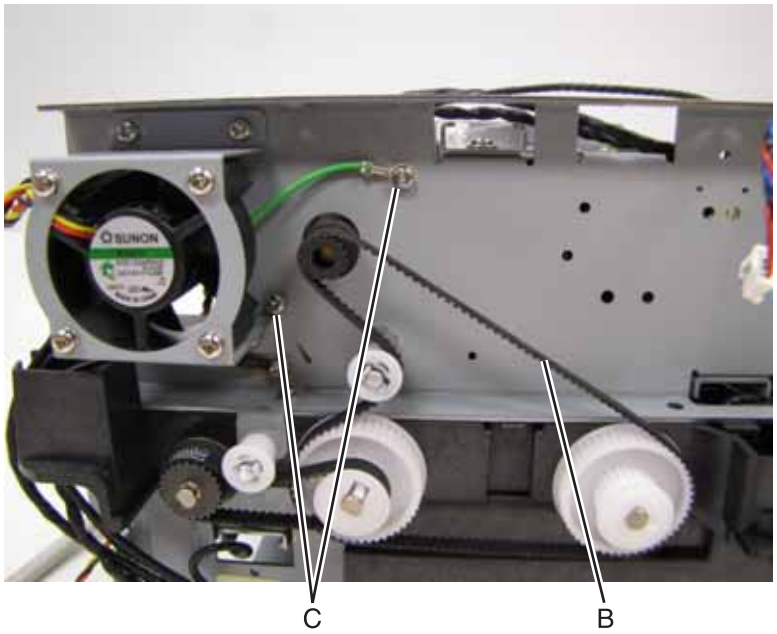
Note: To prevent damage, lock the flatbed scanner module while performing this repair.

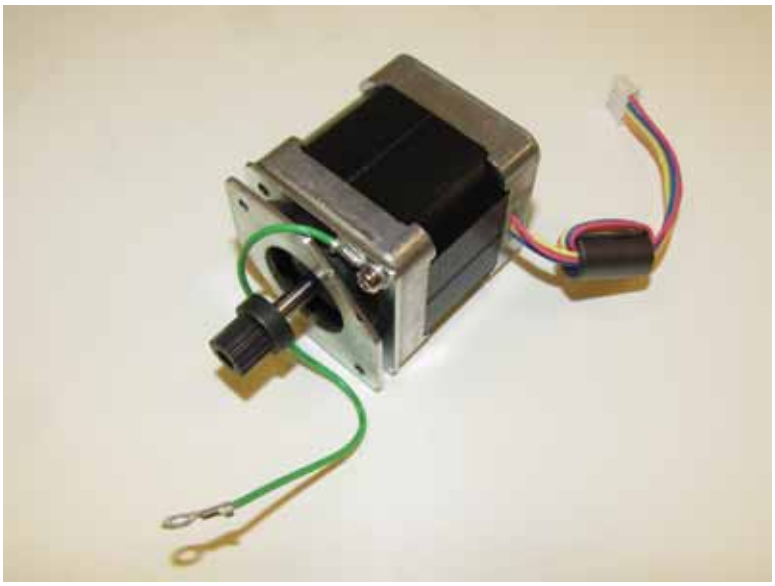
1. Remove the complete ADF scanner assembly. See **"Complete ADF scanner assembly removal" on page 4-70**.
2. Disconnect the cable (A).



3. Slip the belt (B) from its place on the feed roller motor pulley, and then remove the two screws (C).



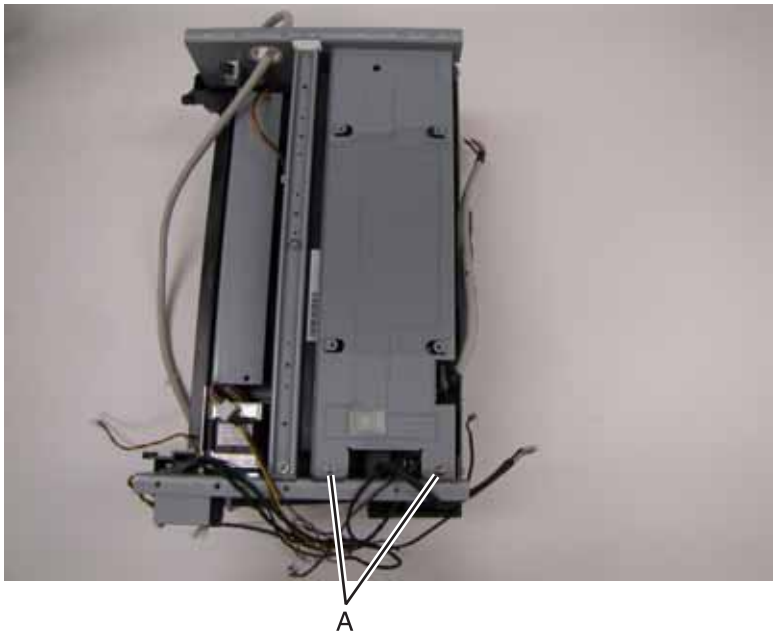
4. Remove the feed roller motor.



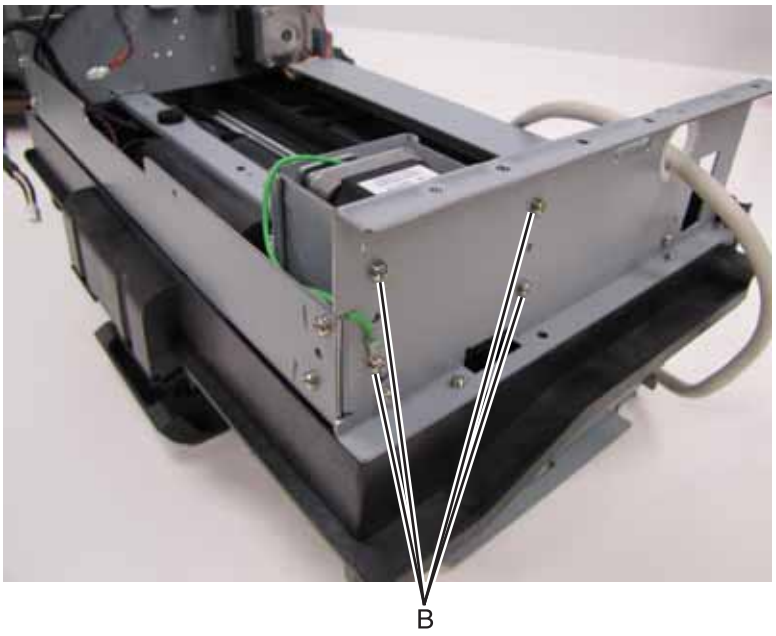
Pick roller motor removal

Note: To prevent damage, lock the flatbed scanner module while performing this repair.

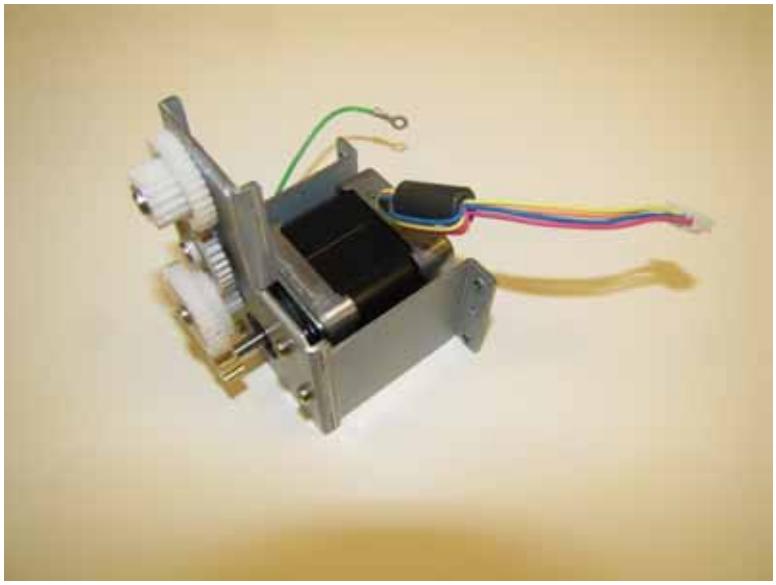
1. Remove the complete ADF scanner assembly. See **"Complete ADF scanner assembly removal" on page 4-70**.
2. Remove the engine board. See **"Engine board removal" on page 4-67**.
3. Remove the two screws (A), and remove the panel.



4. Remove the four screws (B).



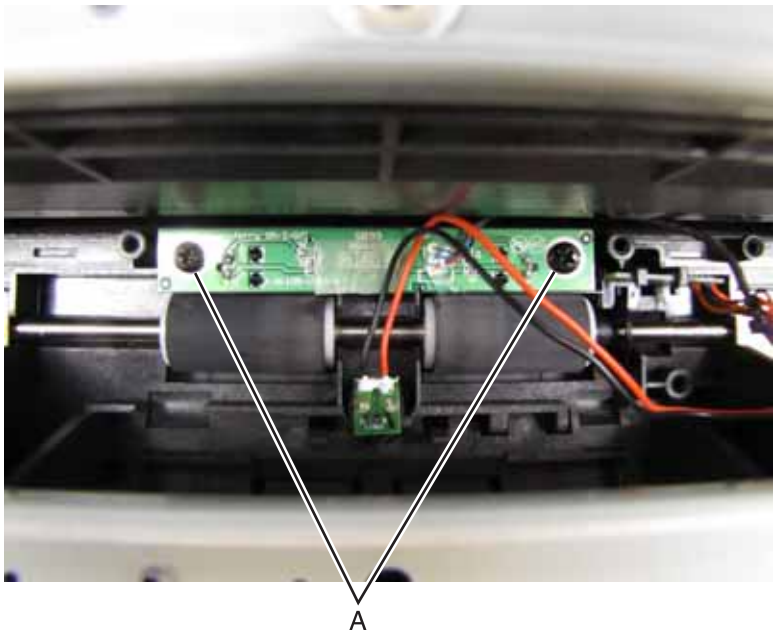
5. Remove the pick roller motor.



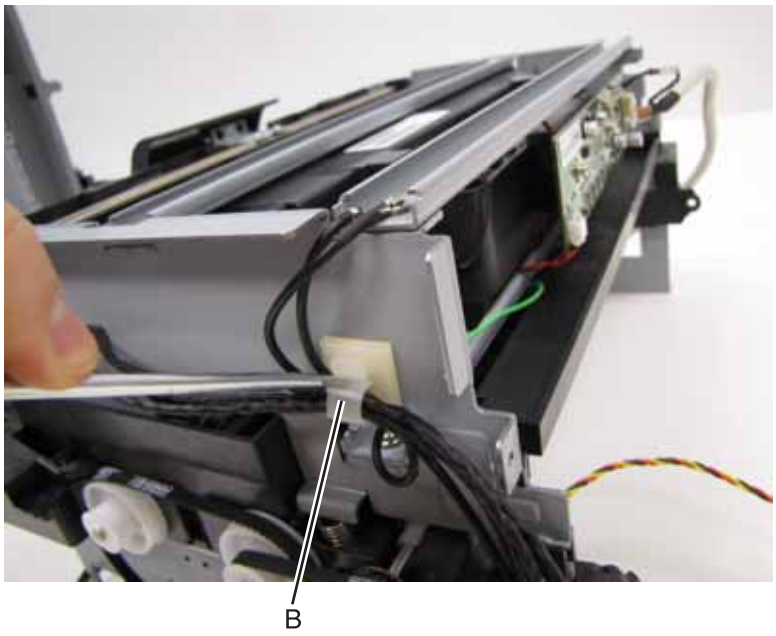
Media sensor removal

Note: To prevent damage, lock the flatbed scanner module while performing this repair.

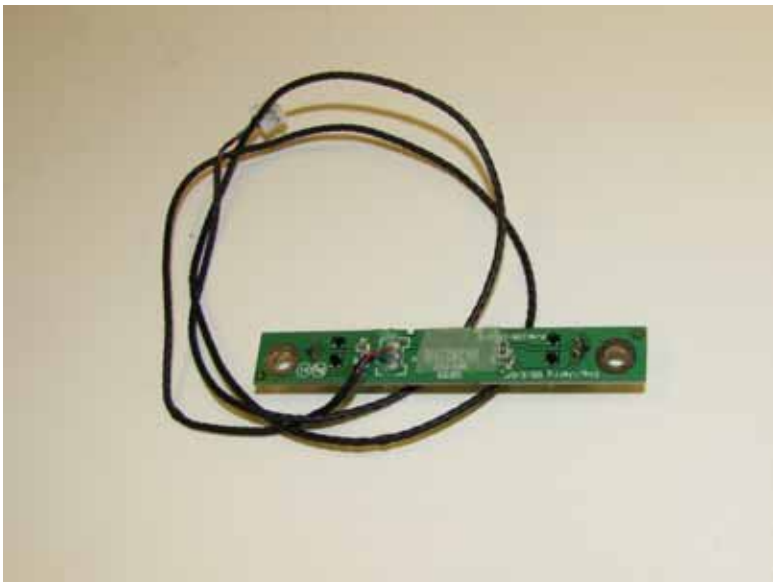
1. Remove the complete ADF scanner. See **"Complete ADF scanner assembly removal" on page 4-70**.
2. Remove the two screws (A) from the media sensor.



3. Use a flathead screwdriver to open the clamp (B) to unroute the cable.



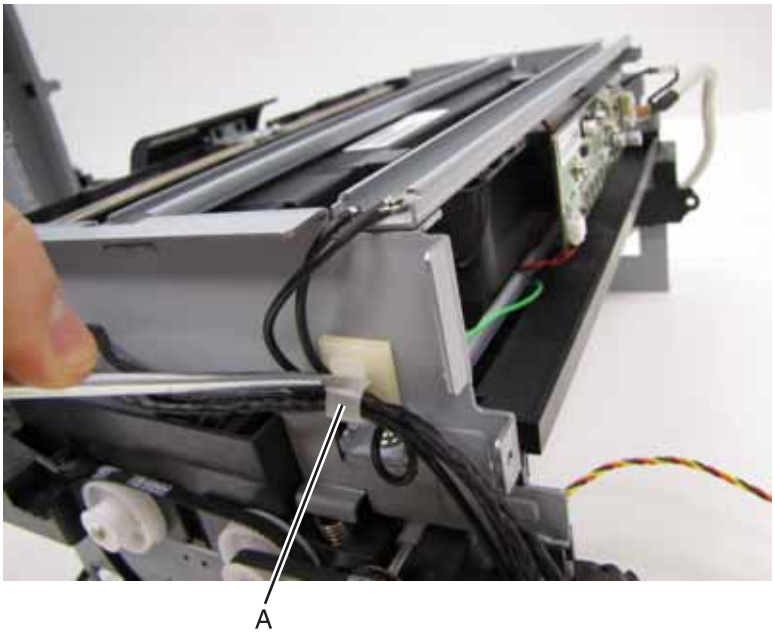
4. Remove the media sensor.



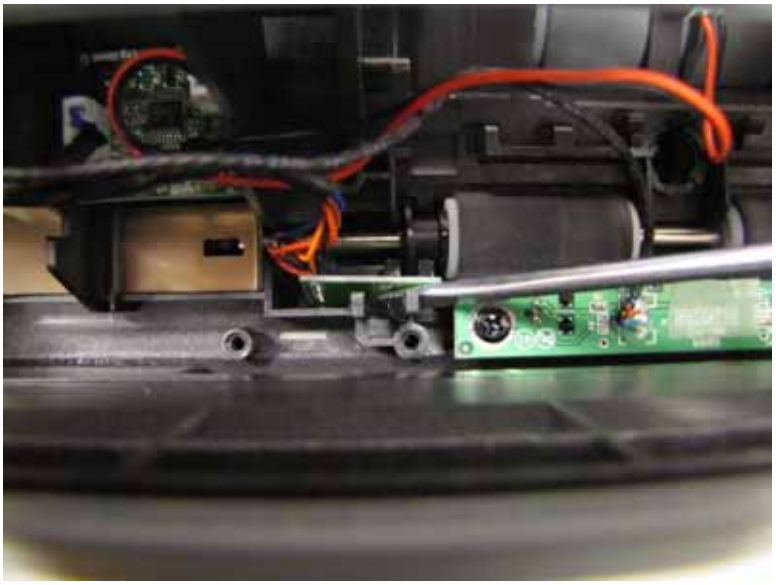
Paper jam sensor removal

Note: To prevent damage, lock the flatbed scanner module while performing this repair.

1. Remove the complete ADF scanner. See **"Complete ADF scanner assembly removal" on page 4-70**.
2. Use a flathead screwdriver to open the clamp (A) to unroute the cable.



3. Use a flathead screwdriver to unsnap the paper jam sensor from its prongs.



4. Remove the paper jam sensor.

Feed rollers removal

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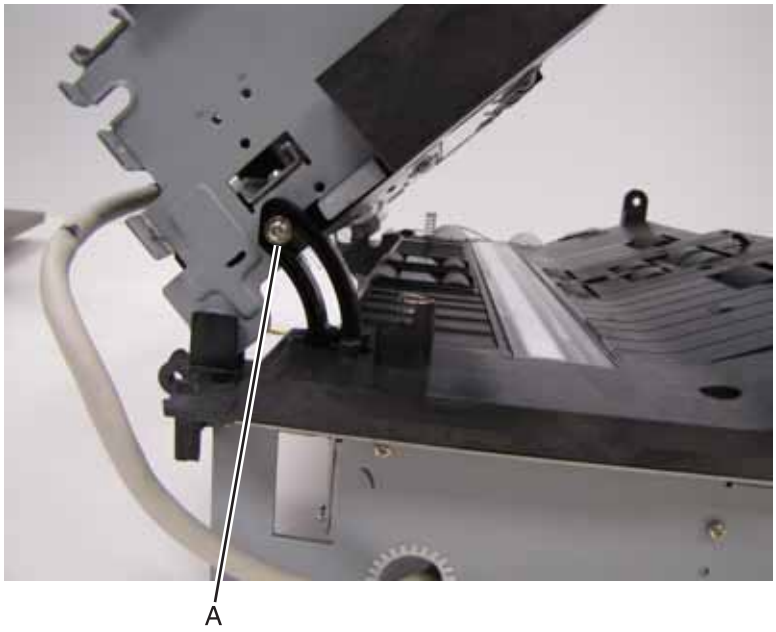
Note: To prevent damage, lock the flatbed scanner module while performing this repair.

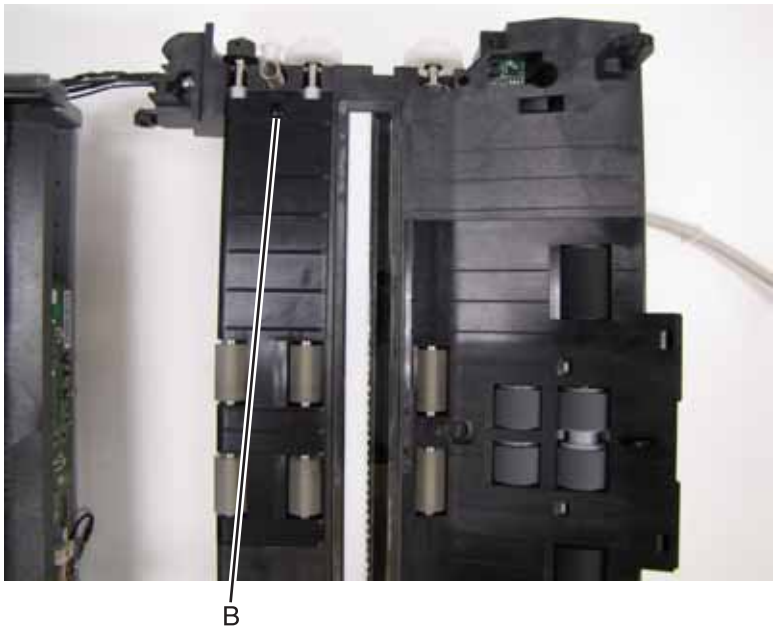
1. Remove the ADF feed roller drive belts. See **"ADF feed roller drive belts removal" on page 4-75**.
2. Remove the one screw (A) from the support arm.



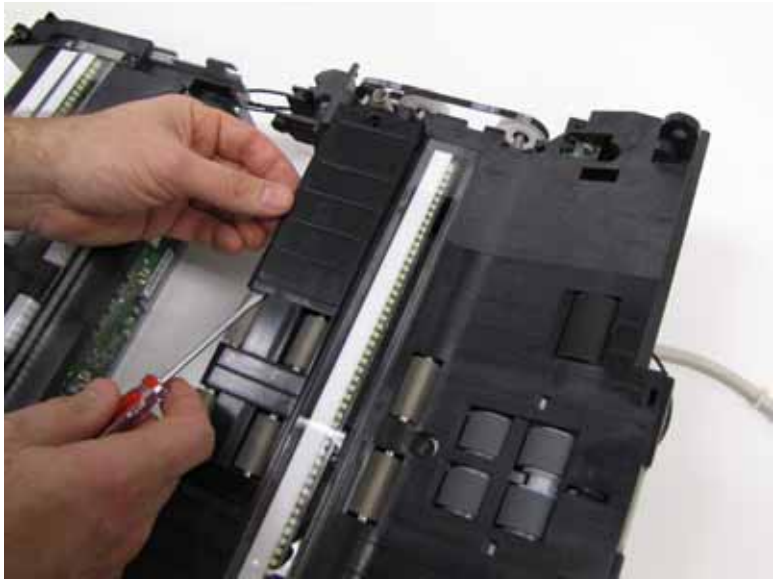
3. Use a flathead screwdriver to pry the support arm from the upper ADF assembly.

4. Lift, and rotate the upper ADF assembly from the lower ADF assembly.

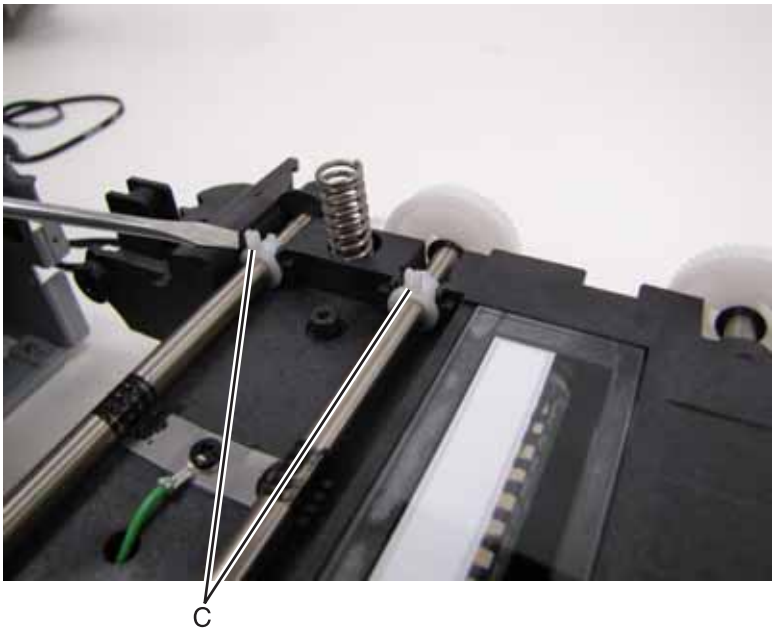
5. Remove the one screw (B).



6. Disconnect the feed roller cover, and remove.

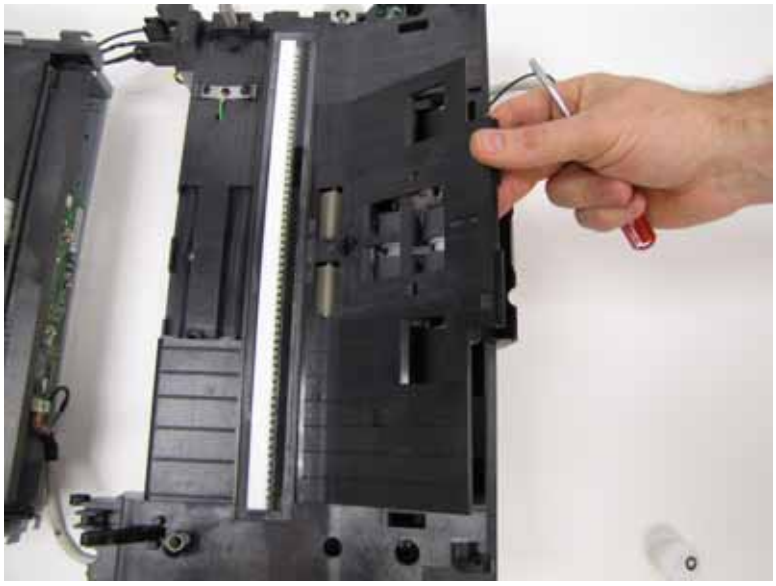


7. Rotate the arms of the feed roller bearings (C) up.

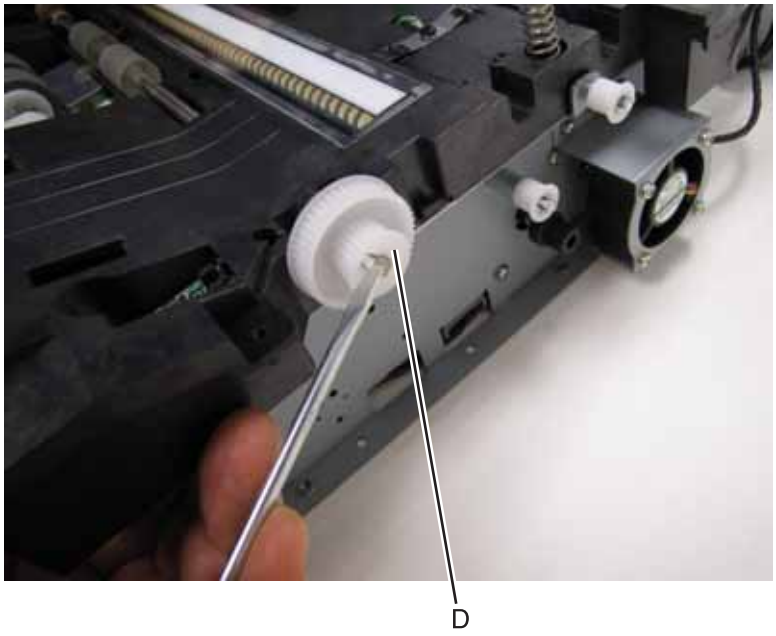


8. Lift, and remove the feed rollers.

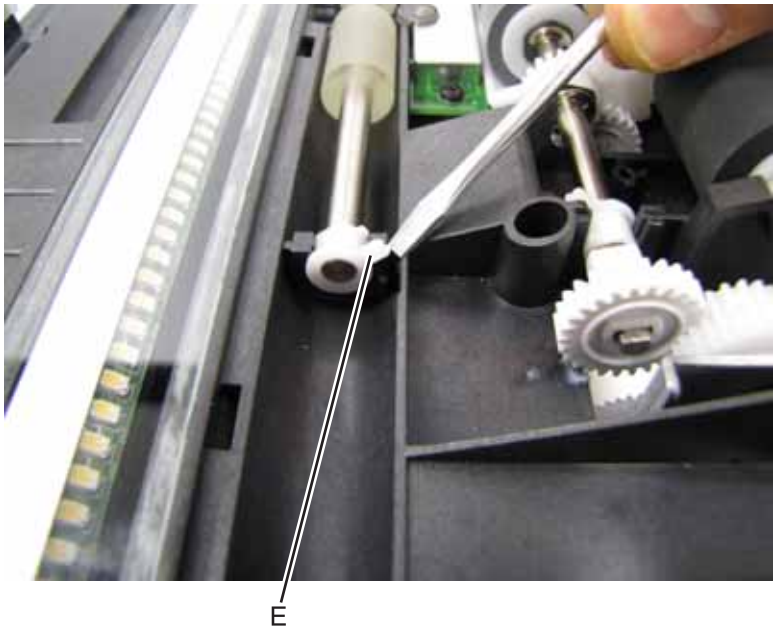
9. Remove the gears from the ends of the feed rollers.
10. Remove the pick roller cover.



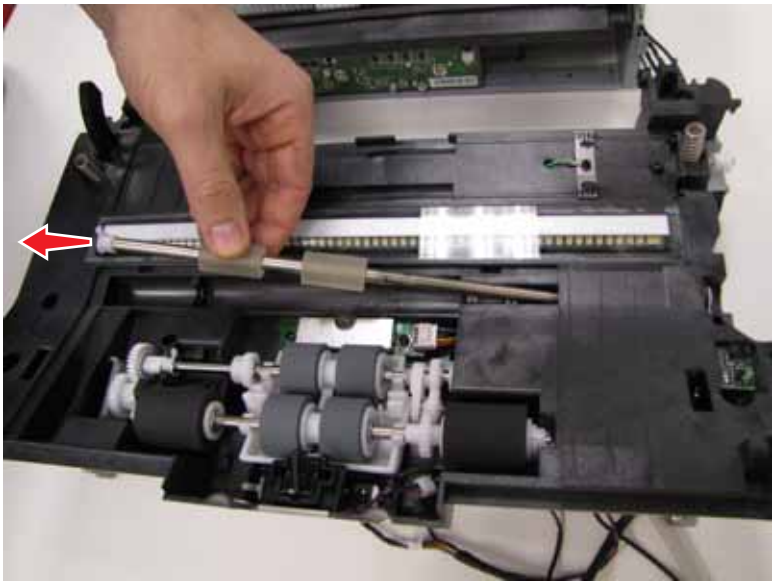
11. Remove the gear (D) from the end of the feed roller.



12. Rotate the arm of the feed roller bearing (E) up.



13. Slide the feed roller out from the base of the scanner.



14. Remove the feed rollers.

Cover open sensor removal

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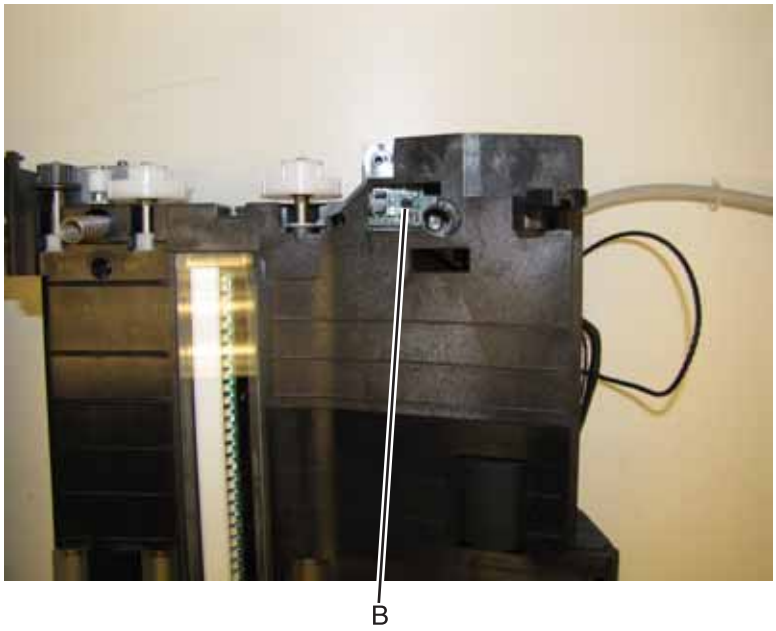
Note: To prevent damage, lock the flatbed scanner module while performing this repair.

1. Remove the ADF feed roller drive belts. See **"ADF feed roller drive belts removal" on page 4-75**.
2. Remove the one screw (A) from the support arm.

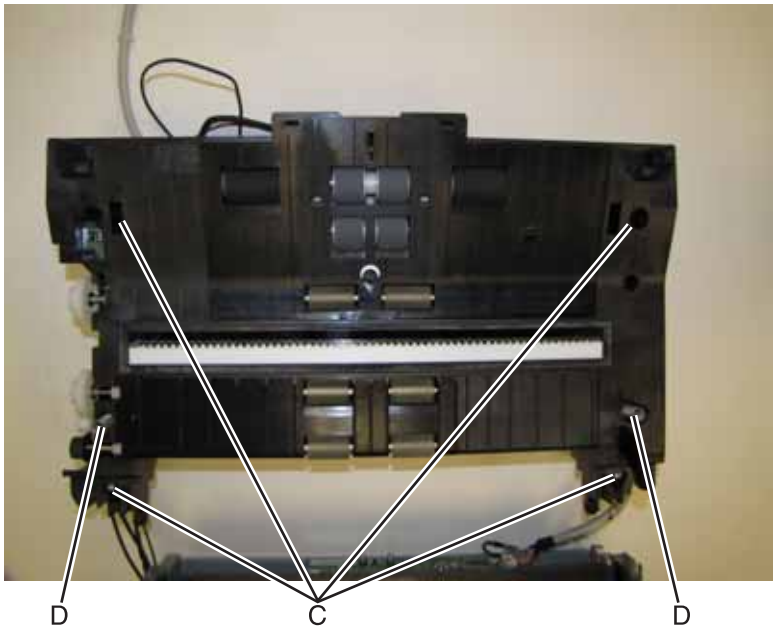
3. Use a flathead screwdriver to pry the support arm from the upper ADF assembly.

4. Lift, and rotate the upper ADF assembly from the lower ADF assembly.

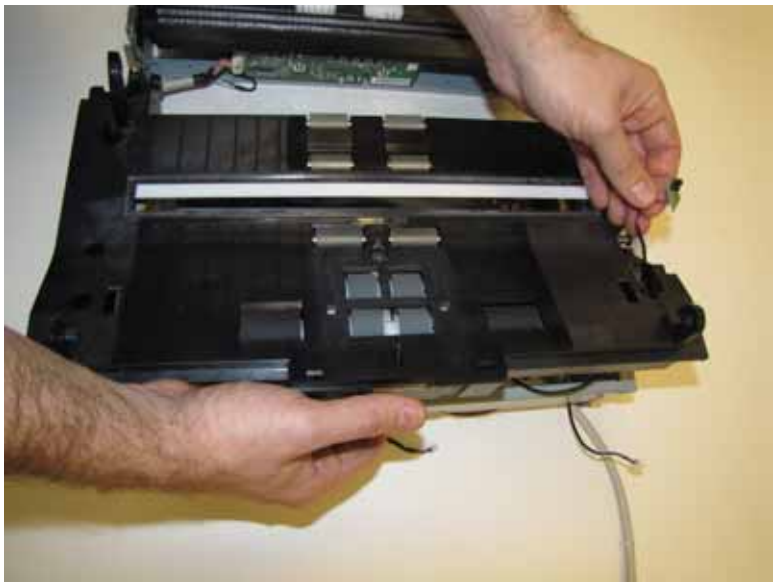
5. Remove the screw (B) from the cover open sensor.



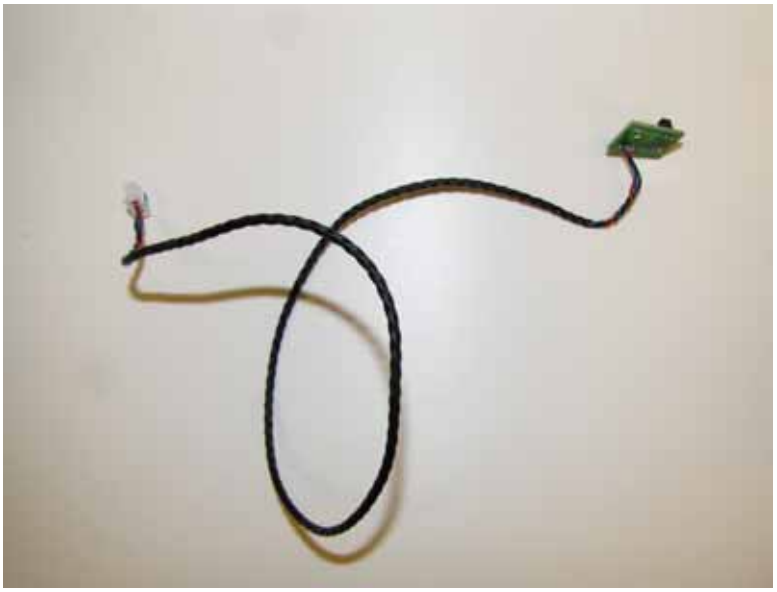
6. Remove the four screws (C) from the cover, and the two screws (D) from the springs.



7. Lift the lower ADF cover slightly and unroute the cover open sensor cable through the bottom.



8. Remove the cover open sensor.

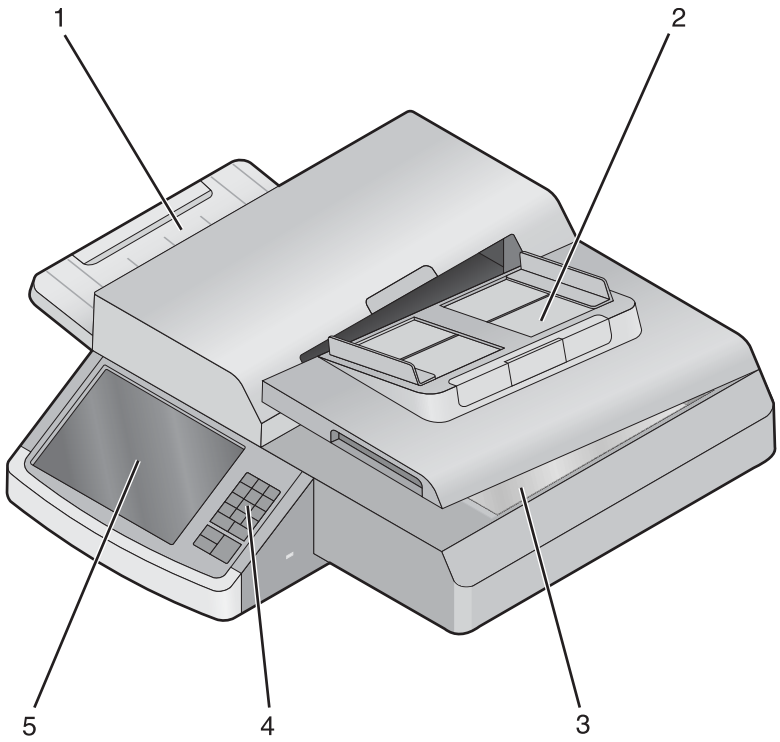


5. Connector locations

Scanner mechanism overview and locations

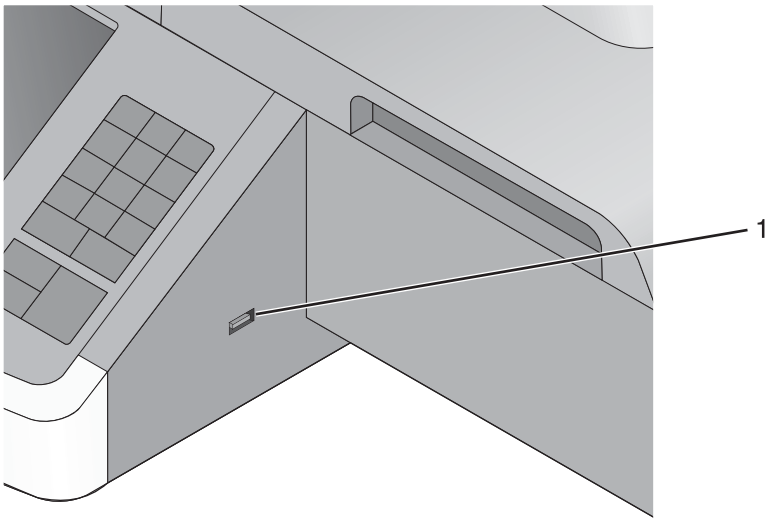
This section contains an overview of the major components of the scanner hardware.

External view



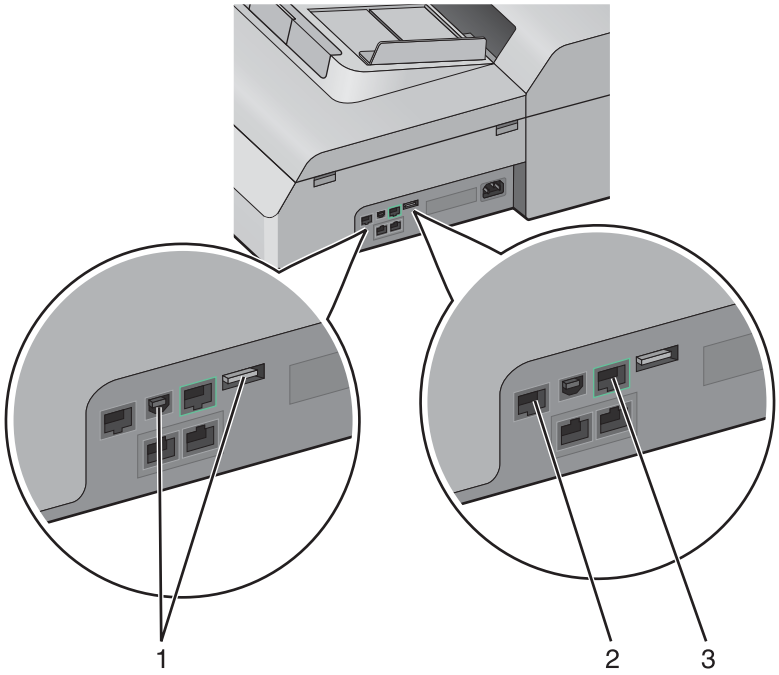
Number	Item
1	Scanner exit tray
2	Automatic Document Feeder (ADF)
3	Scanner cover
4	Keypad
5	Home screen

Card reader view



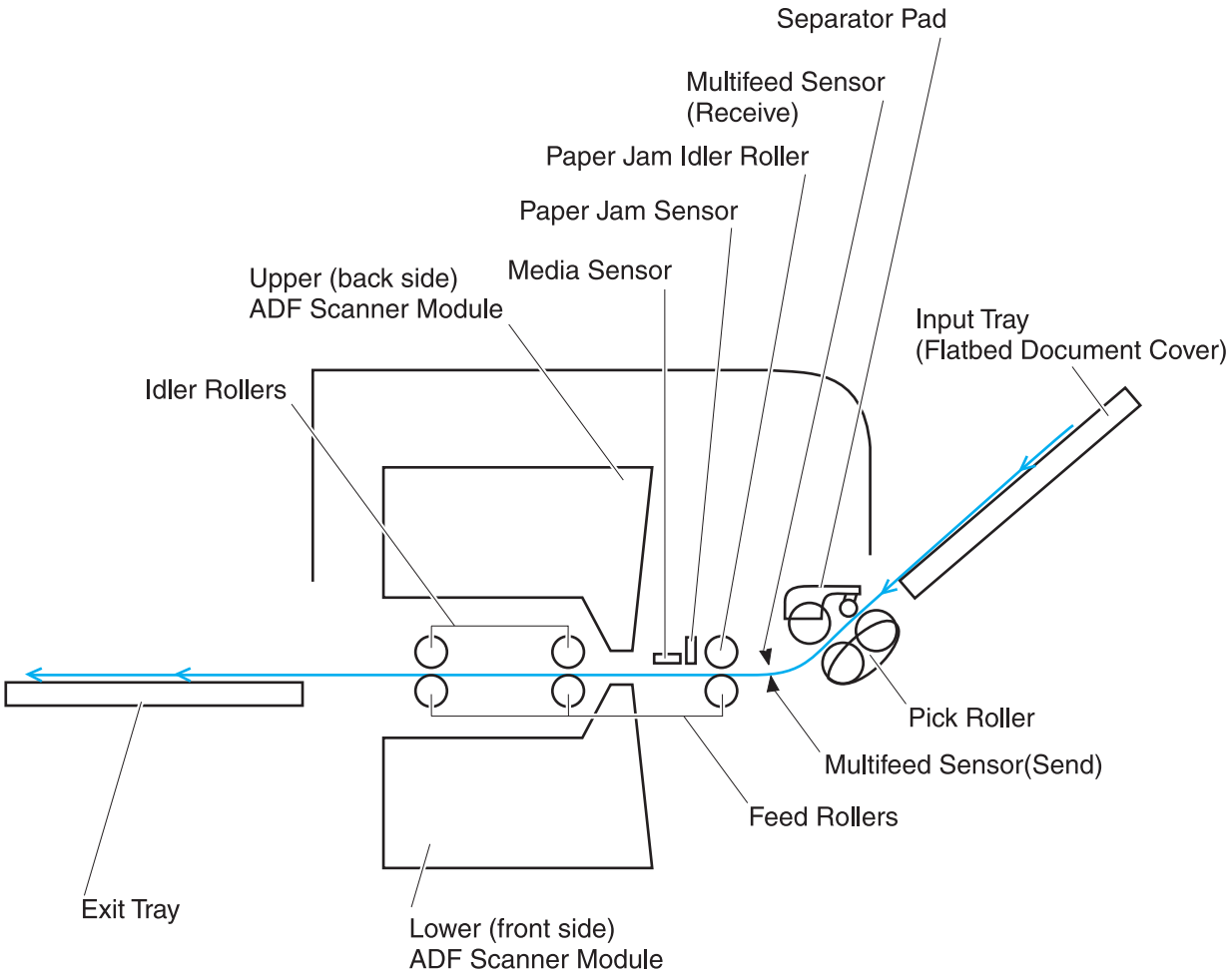
Number	Item	Function
1	USB port	Insert for a USB flash drive to send data or to save scanned images

Cable locations



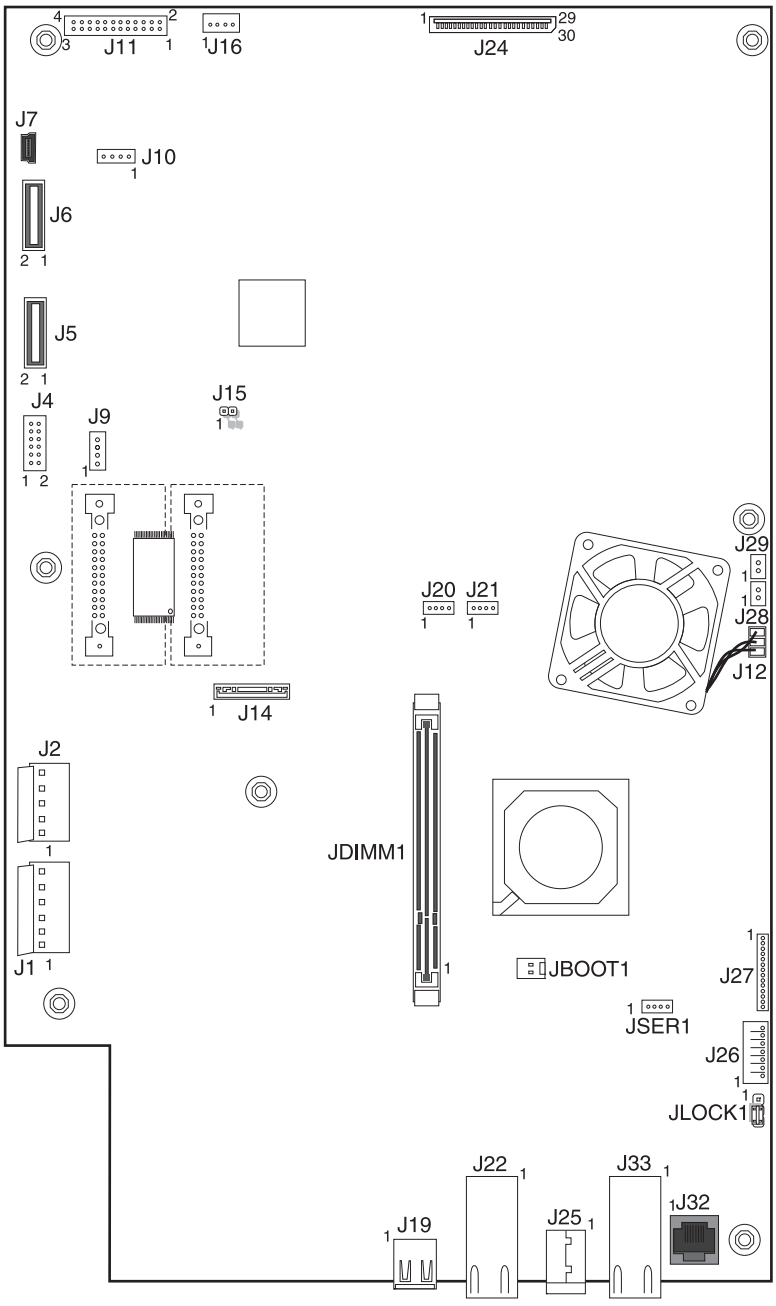
Number	Item
1	USB port **Warning: Potential damage:** Do not touch the USB cable, any network adaptor, or the scanner in the area shown while actively printing. A loss of data or a malfunction can occur.
2	Ethernet port for network connection
3	Ethernet port for printer connection

Paper path


Separator Pad
Multifeed Sensor
(Receive)
Paper Jam Idler Roller
Paper Jam Sensor
Media Sensor
Upper (back side)
ADF Scanner Module
Input Tray
(Flatbed Document Cover)
Idler Rollers
Pick Roller
Multifeed Sensor(Send)
Feed Rollers
Exit Tray
Lower (front side)
ADF Scanner Module

Connections

Scanner controller board



Part	Connector	Pin no.	Signal
From power supply	J1	1	+24V
		2	GND
		3	+5V
		4	GND
		5	+5V
		6	GND
Engine card	J2	1	+24V
		2	GND
		3	GND
		4	+5V
		5	GND
Scanner engine card	J4	1	GND
		2	TOP_FB_CN
		3	TOP_BS_CN
		4	GND
		5	MDC_RXD_CN
		6	MMDC_TXD_CN
		7	GND
		8	ADF_PAPER_PRES_R
		9	FB_COV_CLOSING_R
		10	
		11	MDC_RST_NR
		12	GND
Front side ADF scan module	J5	1	GND
		2	FSPGA_LVDS_MCLK-
		3	FSPGA_LVDS_MCLK+
		4	GND
		5	FSF_LVDS_RXCLK-
		6	FSF_LVDS_RXCLK+
		7	GND
		8	FSF_LVDS_RXIN2-
		9	FSF_LVDS_RXIN2+
		10	GND
		11	FSF_LVDS_RXIN1-
		12	FSF_LVDS_RXIN1+
		13	GND
		14	FSF_LVDS_RXIN0-

Part	Connector	Pin no.	Signal
Front side ADF scan module (continued)	J5 (continued)	15	FSF_LVDS_RXIN0+
		16	GND
		17	FSR_AFE_NRST_R
		18	GND
		19	FSR_AFE_SDIO_R
		20	FSR_AFE_SCK_R
		21	FSR_AFE_SEN_R
		22	FSR_AFE_SH_R
		23	FS_PWRSVR_R
		24	5V_FS_CDU
		25	5V_FS_CDU
		26	GND
		27	+24V
		28	+24V
		29	FS_LAMP_ON
		30	GND
		31	GND
		32	GND
Back side ADF scan module	J6	1	GND
		2	BSPGA_LVDS_MCLK-
		3	FSPGA_LVDS_MCLK+
		4	GND
		5	BSF_LVDS_RXCLK-
		6	BSF_LVDS_RXCLK+
		7	GND
		8	BSF_LVDS_RXIN2-
		9	BSF_LVDS_RXIN2+
		10	GND
		11	BSF_LVDS_RXIN1-
		12	BSF_LVDS_RXIN1+
		13	GND
		14	BSF_LVDS_RXIN0-
		15	BSF_LVDS_RXIN0+
		16	GND
		17	BSR_AFE_NRST_R
		18	GND
		19	BSR_AFE_SDIO_R
		20	BSR_AFE_SCK_R
		21	BSR_AFE_SEN_R
		22	BSR_AFE_SH_R
		23	BS_PWRSVR_R

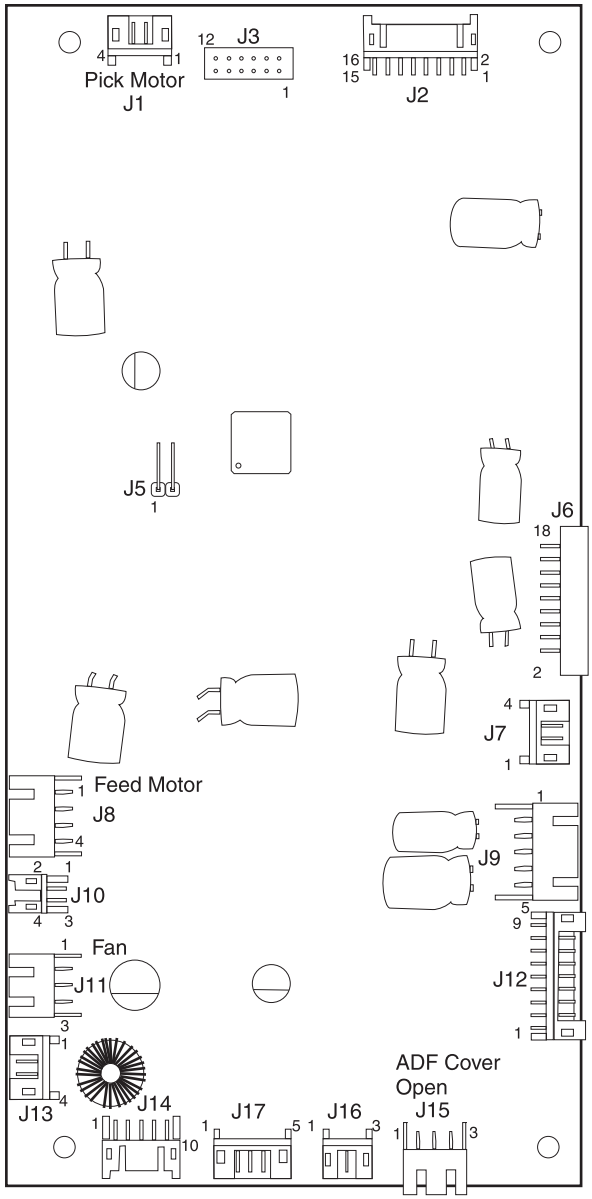
Part	Connector	Pin no.	Signal
Back side ADF scan module (continued)	J6 (continued)	24	5V_BS_CDU
		25	5V_BS_CDU
		26	GND
		27	+24V
		28	+24V
		29	BS_LAMP_ON_R
		30	GND
		31	GND
		32	GND
USB-operator panel	J7	1	GND
		2	USB_DM1
		3	USB_DP1
		4	GND
		5	GND
No connection	J9		
No connection	J10		
Operator panel	J11	1	UI_RESET_NR
		2	GND
		3	TX1-
		4	TX1+
		5	CLKTX-
		6	CLKTX+
		7	CLKTX-
		8	CLKTX+
		9	GND
		10	+5V_UI
		11	RXD232_N
		12	TXD232_N
		13	TX0-
		14	TX0+
		15	GND
		16	+5V_UI
		17	+5V_UI
		18	+5V_UI
		19	WAKE*
		20	GND
		21	GND
		22	LED_DRV_YLW
		23	+5V
		24	PBUT_CON

Part	Connector	Pin no.	Signal
CPU fan	J12	1	V_FANPWR
		2	GND
		3	FAN_TACH
HDD (ISP)	J14	1	GND
		2	USBOUT+
		3	USBOUT-
		4	GND
		5	USBIN+
		6	USBIN-
		7	GND
		8	A0
		9	RESET
		10	+5V
		11	I2C_DAT
		12	+5V
		13	I2C_CLK
		14	+5V
No connection	J15		
No connection	J16		
USB-back	J19	1	S_BACK_USB_PWR
		2	USB_DM2
		3	USB_DP2
		4	GND
		5	GND
		6	GND
No connection	J20		
No connection	J21		
Ethernet-to printer	J22	1	TRCT3
		2	TRD3-
		3	TRD3+
		4	TRD2+
		5	TRD2-
		6	TRCT2
		7	TRCT4
		8	TRD4+
		9	TRD4-
		10	TRD1-
		11	TRD1+
		12	TRCT1
		13	ACT_LED-
		14	

Part	Connector	Pin no.	Signal
Ethernet-to printer (continued)	J22 (continued)	15	LNK_LED-
		16	
Flatbed scanner module	J24	1	GND
		2	FB_LAMP_ON_R
		3	+24V
		4	+24V
		5	GND
		6	5V_FB_CDU
		7	5V_FB_CDU
		8	FB_PWRSVR_R
		9	FBR_AFE_SH_R
		10	FBR_AFE_SEN_R
		11	FBR_AFE_SCK_R
		12	FBR_AFE_SDIO_R
		13	GND
		14	FBR_AFE_NRST_R
		15	GND
		16	FBF_LVDS_RXIN0+
		17	FBF_LVDS_RXIN0-
		18	GND
		19	FBF_LVDS_RXIN1+
		20	FBF_LVDS_RXIN1-
		21	GND
		22	FBF_LVDS_RXIN2+
		23	FBF_LVDS_RXIN2-
		24	GND
		25	FBF_LVDS_RXCLK+
		26	FBF_LVDS_RXCLK-
		27	GND
		28	FBPGA_LVDS_MCLK+
		29	FBPGA_LVDS_MCLK-
		30	GND
USB-back	J25	1	S_USB_DEV_DET
		2	USB_DEV_D4-
		3	USB_DEV_D4+
		4	GND

Part	Connector	Pin no.	Signal
NVRAM cardlet	J26	1	NV_I2C_DATA
		2	+5V
		3	NV_I2C_CLK
		4	GND
		5	OP_INT
		6	+3.3V
		7	GND
Fax card	J27	1	MOD_CS_R
		2	GND
		3	MOD_DIN_R
		4	GND
		5	OP_INT
		6	GND
		7	MOD_CLK_R
		8	GND
		9	MOD_IRQ_R
		10	+5V
		11	POR_CUHD_R-
		12	+3.3V
		13	+3.3V
		14	NC_MOD_P6
Controller cage fan	J28	1	+5V
		2	CAGE_FAN_DRV*
Controller cage fan	J29	1	+5V
		2	CAGE_FAN_DRV*
No connection	J32		
Ethernet-to network	J33	1	TRCT3
		2	TRD3-
		3	TRD3+
		4	TRD2+
		5	RD2-
		6	TRCT2
		7	TRCT4
		8	TRD4+
		9	TRD4-
		10	TRD1-
		11	TRD1+
		12	TRCT1
		13	LED_ACT-
		14	V_LED_VCC
		15	LED_LNK-
		16	V_LED_VCC

Engine board



Part	Connector	Pin no.	Signal
Pick roller motor	J1	1	PICK 1B
		2	PICK 1A
		3	PICK 2B
		4	PICK 2A
Controller board	J2	1	GND
		2	FRONTSIDE
		3	BACKSIDE
		4	GND
		5	MDC_TXD
		6	MDC_RXD
		7	GND
		8	ADF_PAPER_IN
		9	FB_COVER_OPEN
		10	BOOT_SEL
		11	RESET_N
		12	HW_RESERVE
		13	NC
		14	NC
		15	NC
		16	NC
Flatbed scanner module	J6	1	+24V
		2	FEED_STEP
		3	+24V
		4	FEED_VREF1
		5	FEED_VREF2
		6	GND
		7	FEED_MS1
		8	FEED_MS2
		9	GND
		10	NC
		11	FBM_EN
		12	GND
		13	NC
		14	FEED_DIR
		15	GND
		16	GND
		17	+3.3V
		18	+3.3V
Flatbed home position	J7	1	SIGNAL
		2	SIGNAL
		3	GND
		4	NC

Part	Connector	Pin no.	Signal
Feed roller motor	J8	1	FEED_1B
		2	FEED_1A
		3	FEED_2B
		4	FEED_2A
Power supply	J9	1	GND
		2	+5V
		3	GND
		4	GNS
		5	+24V
Multifeed sensor receive	J10	1	GND
		2	ULTRASONIC 300KHZ
		3	+16V
		4	GND
Power supply fan	J11	1	FAN FEEDBACK
		2	GND
		3	12V_FAN
ADF paper size sensor	J12	1	W1_SEN
		2	W2_SEN
		3	W3_SEN
		4	+5V
		5	GND
		6	L1_SEN
		7	L2_SEN
		8	FB_COVER
		9	LED_DISPLAY
ADF paper present sensor	J13	1	SIGNAL
		2	SIGNAL
		3	GN
		4	NC
Multifeed sensor send	J14	1	
		2	GND
		3	MULTIFEED
		4	ULTRASONIC RESET
		5	I2C_SDA
		6	GND
		7	I2C_SCL
		8	GND
		9	ULTRASONIC TEST
		10	PAPER DET
ADF cover open sensor	J15	1	SIGNAL
		2	SIGNAL
		3	GND

Part	Connector	Pin no.	Signal
ADF paper out	J16	1	+5V
		2	SIGNAL
		3	GND
ADF paper jam	J17	1	SIGNAL
		2	SIGNAL
		3	GND
		4	SIGNAL
		5	SIGNAL

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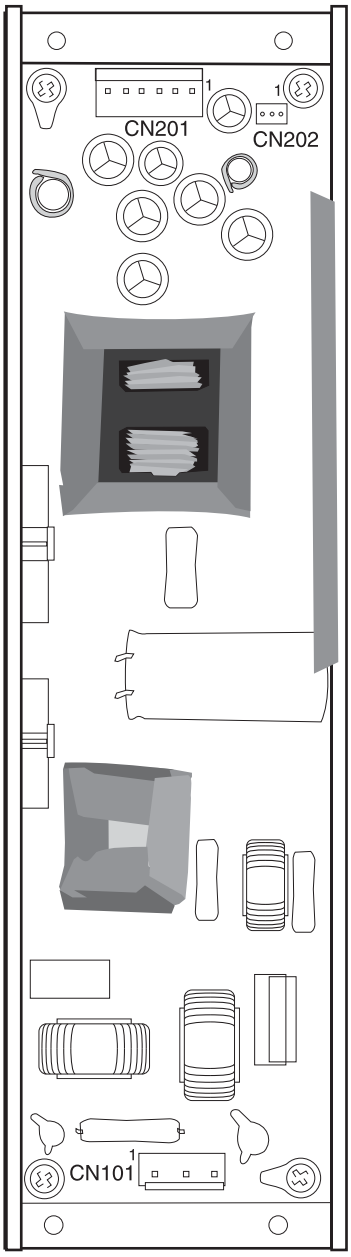
Power supply board



Part	Connector	Pin no.	Signal
Main power out	CN201	1	+24V
		2	GND
		3	+5V
		4	GND
		5	+5V
		6	GND

6. Maintenance

This chapter describes procedures for scanner preventive maintenance. Follow these recommendations to help prevent problems and maintain optimum performance.

Safety inspection guide

The purpose of this inspection guide is to aid you in identifying unsafe conditions.

If any unsafe conditions exist, find out how serious the hazard could be and if you can continue before you correct the hazard.

Check the following items:

- Damaged, missing, or altered parts, especially in the area of the On/Off switch and the power supply
- Damaged, missing, or altered covers, especially in the area of the top cover and the power supply cover
- Possible safety exposure from any non-Lexmark attachments

Scheduled maintenance

The operator panel may display the message 80 or Scheduled Maintenance at required maintenance intervals. When a maintenance message is displayed, perform the maintenance specified.

Device specific scheduled maintenance

On this device, it is necessary to replace the ADF separator pad and replace the ADF pick roller at designated intervals to maintain the paper feed reliability of the scanner.

The table below lists the parts needed to perform the scheduled maintenance on this device

Part number	Description	Maintenance interval
40X6447	ADF separator pad assembly	100k ADF scans
40X6446	ADF pick roller assembly	200k ADF scans

Note: If needed, reset the maintenance counter after performing scheduled maintenance.

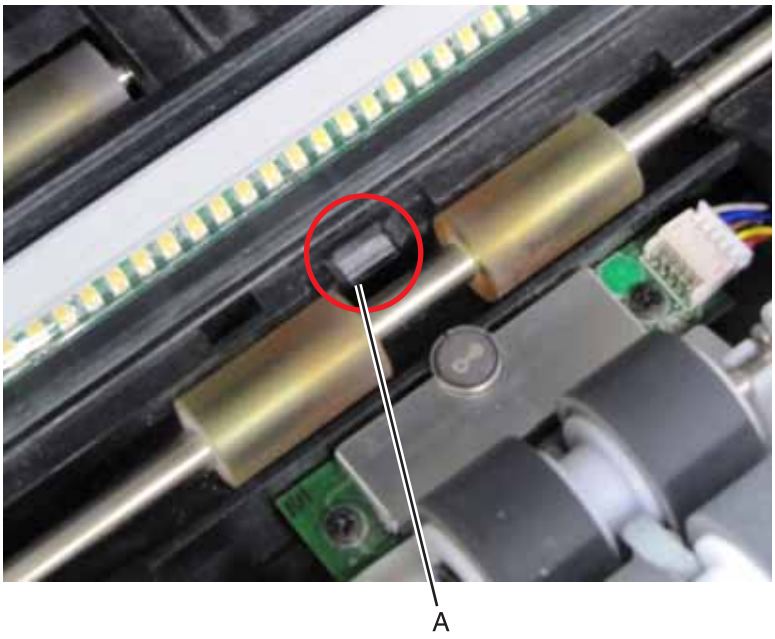
Preventive maintenance

Between scheduled maintenance intervals, paper feed, paper transport, and image quality problems can occur. To prevent issues like these from occurring, there are preventive maintenance procedures that can be performed.

Device specific preventive maintenance

An ADF feed roller cleaning can be performed to improve paper feed reliability. ADF feed roller cleaning cloths are provided with a new scanner, stored in the compartment beneath the exit tray. Additional cleaning cloths are available.

To clean the touchscreen, key pad, flatbed scanner glass, media sensor and mirror (A), and upper and lower ADF scanner glass, use the LCD cleaning cloth.



A single two step LCD cleaning cloth is provided with a new scanner, stored in the compartment beneath the exit tray. Additional cleaning cloths are available.

The table below lists the parts needed to perform the preventive maintenance

Part number	Description	Maintenance interval
16J0900	ADF feed roller cleaning kit	As needed
40X0392	LCD cleaning kit	As needed

Lubrication

The parts used on this device do not require lubrication. Do not lubricate any parts on this machine.

7. Parts catalog

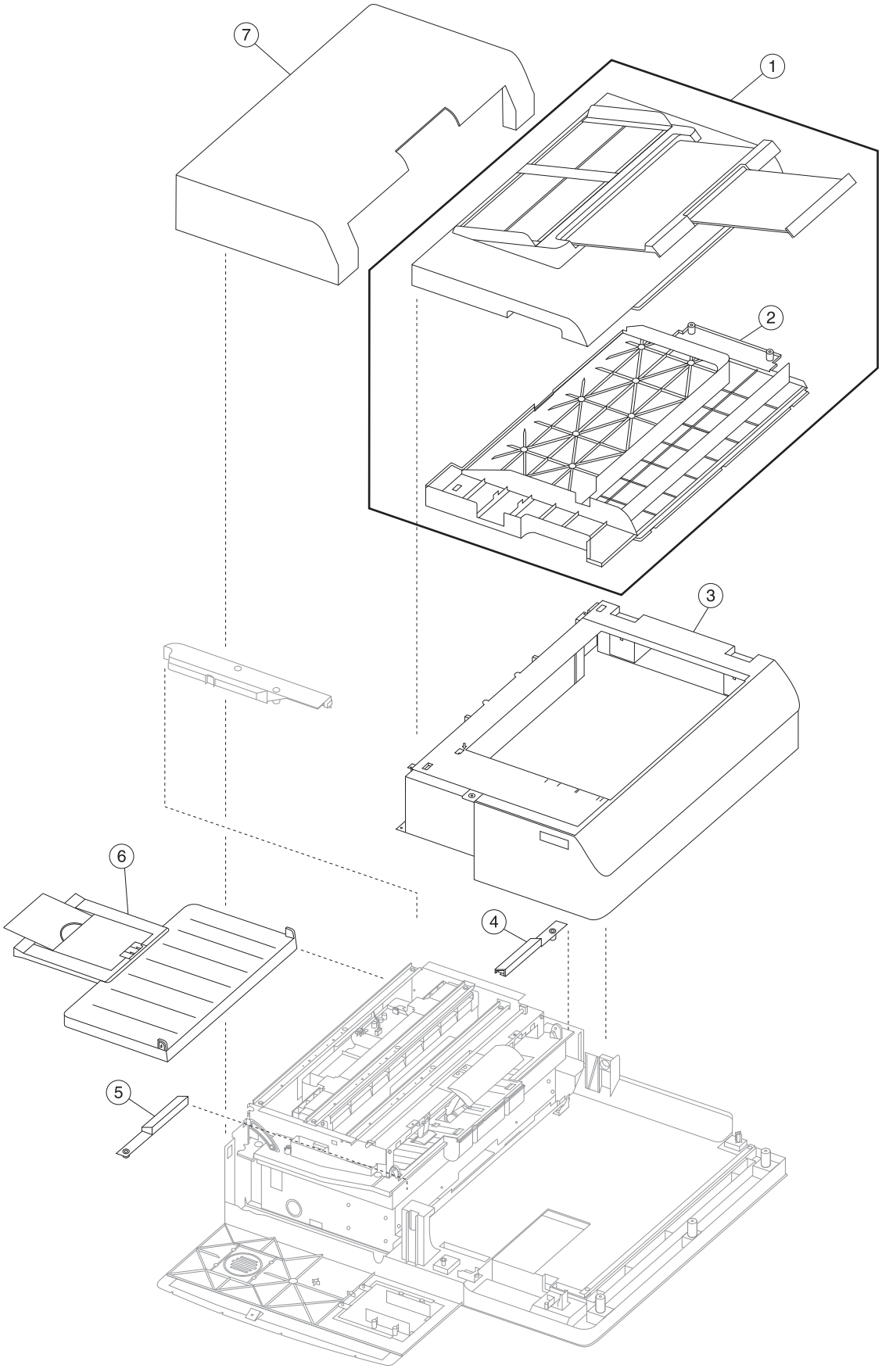
How to use this parts catalog

The following legend is used in the parts catalog:

Asm-Index	Part number	Units/mach	Units/ FRU	Description

- **Asm-index**: Identifies the assembly and the item in the diagram. For example, 3-1 indicates Assembly 3 and item number 1 in the table.
- **Part number**: Identifies the unique number that identifies this FRU.
- **Units/mach**: Refers to the number of units actually used in the base machine or product.
- **Units/FRU**: Refers to the number of units packaged together and identified by the part number.
- **NS**: (Not shown) in the Asm-Index column indicates that the part is procurable but is not pictured in the illustration.

Assembly 1: Covers



Assembly 1: Covers

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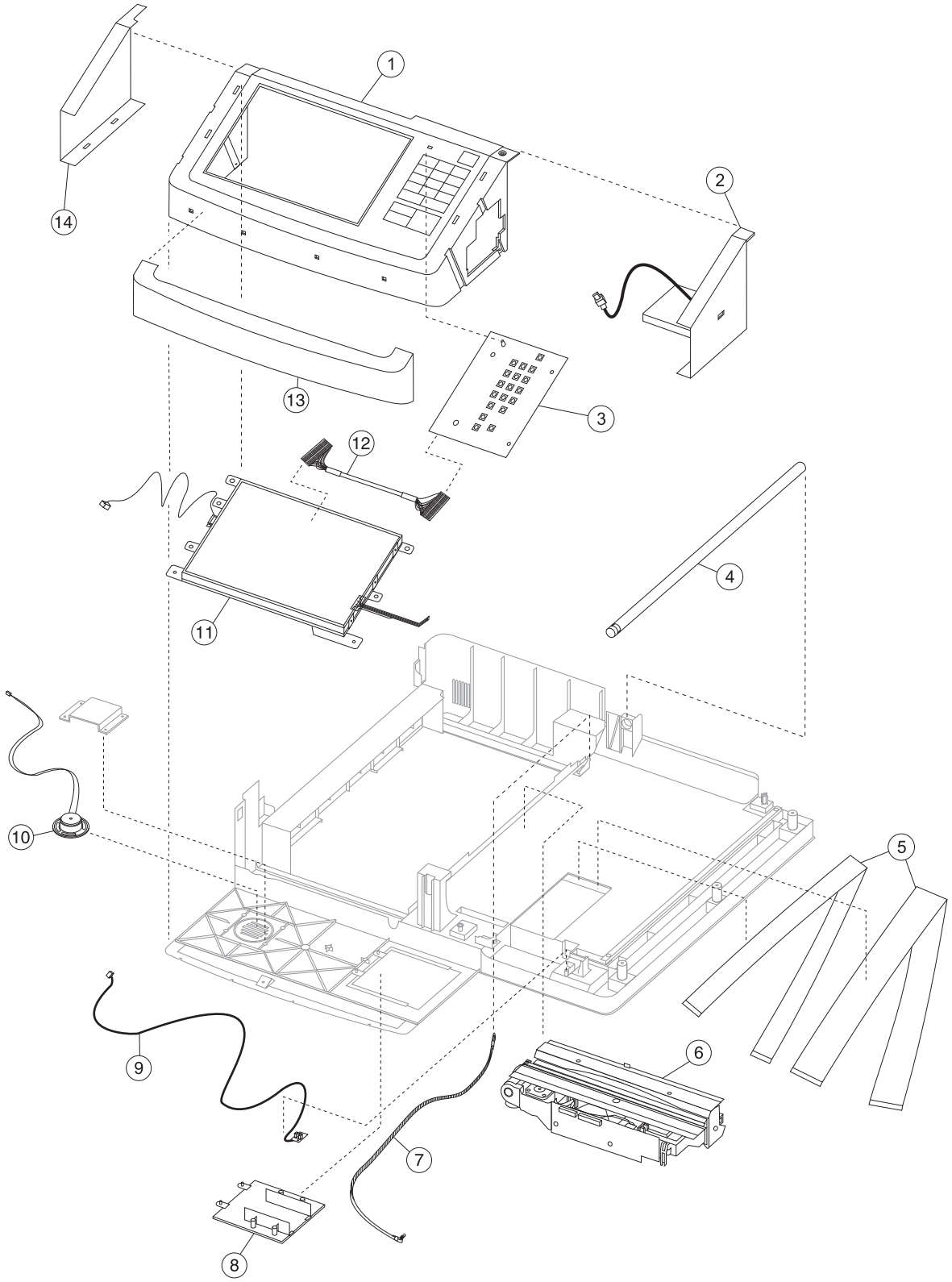
Asm-Index	Part number	Units/ mach	Units/ FRU	Description
1– 1	40X6444	1	1	Complete flatbed document cover
2	40X6445	1	1	Flatbed document cover cushion
3	40X6453	1	1	Flatbed cover
4	40X6513	1	1	Rear ADF entry cover
5	40X6512	1	1	Front ADF entry cover
6	40X6452	1	1	ADF exit tray
7	40X6450	1	1	ADF top cover
NS	40X6878	1	1	Lexmark 6500e model name plate

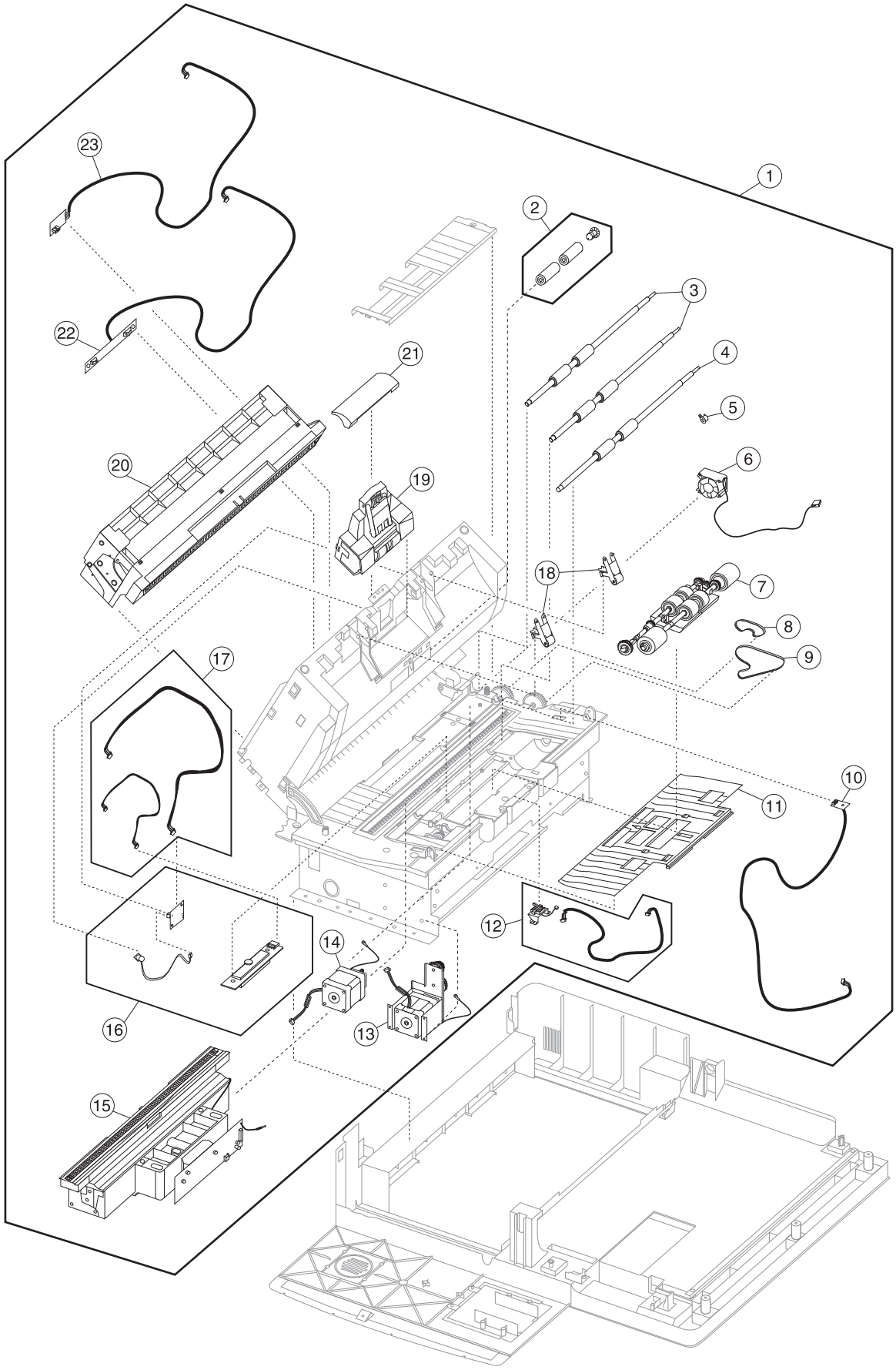
Assembly 2: Operator panel and flatbed



Assembly 2: Operator panel and flatbed

Asm-Index	Part number	Units/ mach	Units/ FRU	Description
2– 1	40X6491	1	1	Main operator panel cover with keypad
2	40X6488	1	1	Right operator panel cover
3	40X6973	1	1	UICC board
4	40X6455	1	1	Flatbed scanner rod
5	40X6485	1	1	Flatbed scanner cables parts pack
6	40X6454	1	1	Flatbed scanner module
7	40X6483	1	1	Flatbed scanner belt with spring
8	40X6492	1	1	UICC access cover
9	40X6484	1	1	Flatbed scanner home position sensor
10	40X6407	1	1	Operator panel speaker
11	40X6307	1	1	10.2-inch touchscreen display
12	40X6306	1	1	UICC display cable
13	40X6489	1	1	Front operator panel cover
14	40X6487	1	1	Left operator panel cover
NS	40X6493	1	1	USB cable parts pack

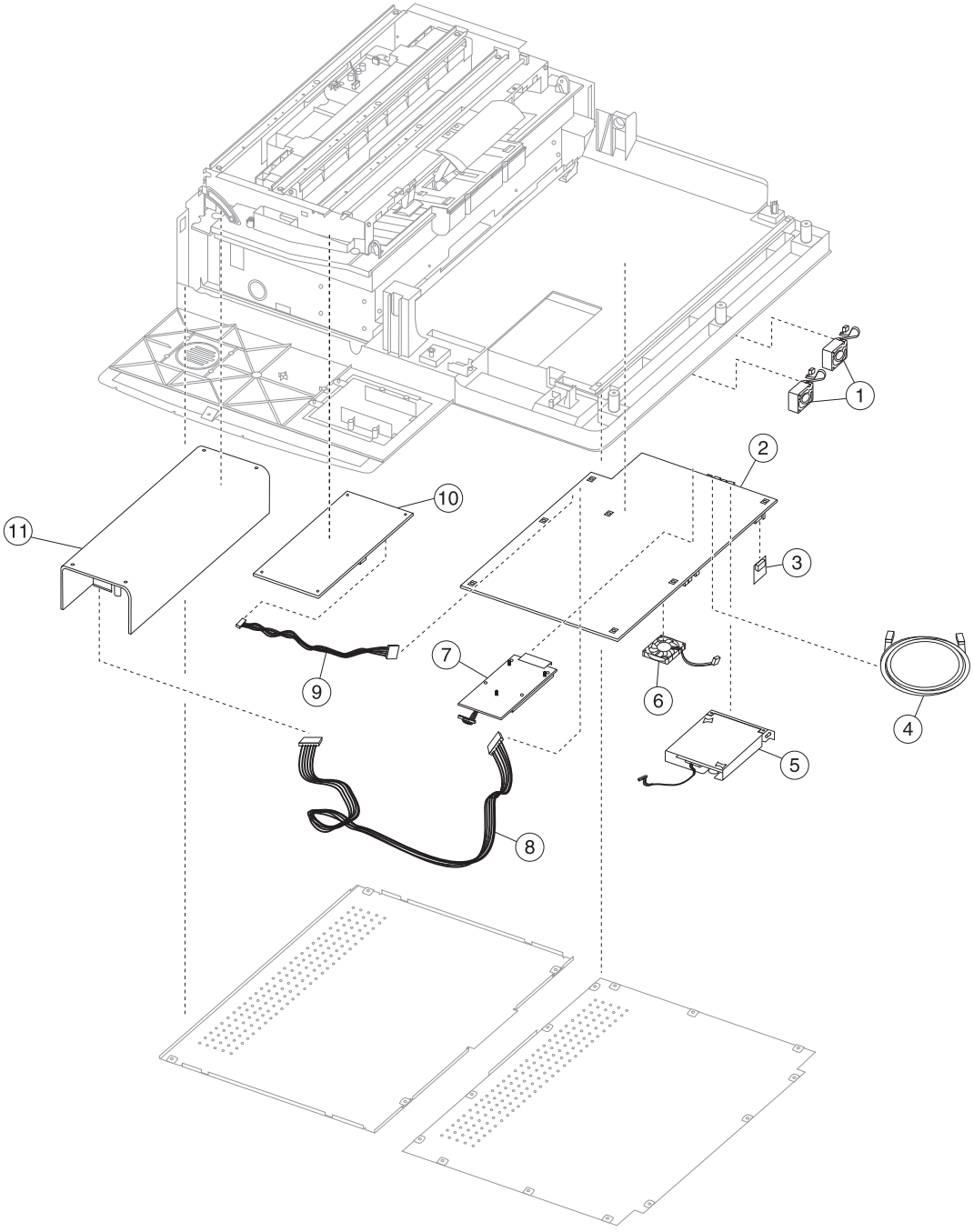
Assembly 3: Automatic document feeder (ADF)



Assembly 3: Automatic document feeder (ADF)

Asm-Index	Part number	Units/ mach	Units/ FRU	Description
3– 1	40X6502	1	1	Complete ADF scanner assembly
2	40X6527	1	1	Paper jam idle roller parts pack
3	40X6529	2	1	Feed rollers #2 and #3
4	40X6528	1	1	Feed roller #1
5	40X6530	1	1	Roller bearing
6	40X2580	1	1	Power supply cooling fan
7	40X6446	1	1	ADF pick roller
8	40X6510	1	1	Feed roller drive belt #3
9	40X6511	1	1	Feed roller drive belts #1 and #2
10	40X6504	1	1	ADF cover open sensor
11	40X6449	1	1	Pick roller access cover
12	40X6505	1	1	ADF paper present sensor
13	40X6525	1	1	Pick roller drive motor
14	40X6526	1	1	Feed roller drive motor
15	40X6117	1	1	Lower ADF scanner module
16	40X6506	1	1	Multifeed sensor parts pack
17	40X6509	1	1	Multifeed sensor cable parts pack
18	40X6448	2	1	ADF entry idle roller
19	40X6447	1	1	ADF separator pad
20	40X6503	1	1	Upper ADF scanner module
21	40X6451	1	1	ADF latch handle
22	40X6508	1	1	Media sensor
23	40X6507	1	1	ADF paper jam sensor

Assembly 4: Electronics



Assembly 4: Electronics

Asm-Index	Part number	Units/mach	Units/FRU	Description
4– 1	40X6876	2	1	Controller board cooling fan
2	40X6494	1	1	Controller board
3	40X6091	1	1	NVRAM card
4	40X7443	1	1	Green network cable
5	40X7058	1	1	Hard disk drive
6	40X6501	1	1	CPU cooling fan
7	40X7055	1	1	Fax card
8	40X6500	1	1	Power supply to controller board cable
9	40X6498	1	1	Engine board to controller board cable
10	40X6497	1	1	Engine board
11	40X6495	1	1	Universal power supply
NS	40X0392	1	1	LCD cleaning cloth (50-pack)
NS	40X7441	1	1	Scanner communications card (for T650/T652 printer controller board)
NS	40X7920	1	1	Scanner communications card (for T654 printer controller board)
NS	40X7516	1	1	Prescribe card
NS	40X7517	1	1	IPDS card
NS	40X7518	1	1	Forms and barcode card

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